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Presidential Address

ENTITLED

"TO REDRESS THE BALANCE."

Delivered before the Section of Balneology and Climatology of the Royal Society of Medicine on Oct. 29th, 1909,

BY LEONARD WILLIAMS, M.D. GLASG., M.R.C.P. LOND.,

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GENTLEMEN,—To the sciences of balneology and climatology it has always been something of a reproach that their use in therapeutics is purely empirical. That, unfortunately, is a reproach the justice of which cannot be gainsaid, and I have thought that I should be doing something to merit the honour which has been conferred upon me in electing me to be the first President of that section of the Royal Society of Medicine which concerns itself with these subjects if I endeavoured in this address to throw some light, however tentative and theoretical, upon the *rationale* of the methods which we employ—if I attempted, in short, to redress the balance between science and empiricism which has too long shown so decided a bias in favour of the latter.

The science of medicine in general is necessarily so occupied with detail that the constant tendency of its devotees is to miss the broad outlines—we cannot, as the saying is, see the forest because of the trees. In order to obtain a prospect of any value to our present purpose it is essential that we should, in the first instance, at any rate, forget the existence of the trees and make our survey as wide and comprehensive as possible. With this end in view I would first venture to remind you of what, though obvious, is too frequently forgotten—namely, the extent to which man, and more especially woman, is subject to what are called the cosmic influences. It is axiomatic to say that man cannot escape the ascendency respectively of day and night, of forenoon and evening, nor of the cyclical effects of the seasons; and it must be equally apparent to the seeing eye that the lower down in the evolutionary scale we descend the more completely do we find him the slave of these silent, immutable, and relentless forces. So subject, indeed, is primitive man to these cosmic influences, so completely does he hibernate and otherwise conform to the cosmic laws, that the phases of his life sink almost to the level of the alternation of generations which characterises certain insects. The higher in the scale he ascends the more independent of these influences does he become, until he arrives at the high state of civilisation in which, so long as his health is preserved, he may be considered as practically beyond their sway. Here I may pause to point out one of the many reasons why woman is, and always must be, essentially and indefeasibly inferior to man, namely, because she is, by reason of her very womanhood, the docile slave of a lunar monthly revolution, from whose tyranny she can never escape.

So long, then, as civilised man retains his health he can afford to disregard these cosmic influences. He may defer the principal call upon his digestive powers to the hour when his frame is exhausted and the sun is set; he may do his best work in the night season; he may labour in winter and in summer play; these and other gauntlets of defiance he may cast with impunity in the teeth of the cosmos—but only so long as his health is maintained. No sooner does he fall a victim to disease than he becomes once more the puppet and plaything of the cosmic powers. Obedient to the rhythm of twilight and dawn, his temperature rises by night and falls by day; the hour of sunset enwraps and constricts him as it would a flower, and by the powers of darkness, like a little child, he is dismayed. Though we cannot explain these subtle and ubiquitous agents we are nevertheless obliged, all of us, to submit to them, and the wise amongst us are those who recognise them and turn them to account.

The same may be said of climatic influences.[1] These are, after all, but a subsection of the cosmic influences which become invested with additional weight and added subtlety when we consider that they include the factors of heredity and environment—the factors, that is, which indelibly stamp upon races, nations, families, and individuals the characteristics which distinguish them from one another. The importance of the part which climatic influences have played, are playing, and are about to play, in the evolution of man towards his higher destiny it is impossible to overlook and would be difficult to overstate. The differences between the white man and the black, between Asiatics and Europeans, between the Latins and the Saxons, between the northerner in each nation and his not far-distant southern brother, are admittedly and even obtrusively climatic in origin. Indirectly climatic, through heredity, is the persistence of these differences through every change of individual *milieu*, and directly climatic are the modifications which change of *milieu* imposes upon families and races. In illustration of this last point I need only mention the fair skin and the red hair which long residence in northern climes has conferred upon some Jewish families and the stereotyping by the climate of the North American continent of the descendants of the motley crew of its widely dissemblant annual European recruits into the hatchet-shaped face and wiry frame of the Red Indian aborigines. The mills of God grind slowly, but they grind exceeding small, and anyone who will study the effects of the climatic factor in determining racial differences will have no trouble in persuading himself of their reality nor of their inexorable and eternal power.

When we take the cold and cosmic northern Scot—cosmic only because we are supposing him to be an invalid—and transport him to the shores of the Mediterranean, we are tearing him from the environment which, acting through countless generations, has made him what he is: fair of skin, and of temperament cautious, taciturn, slow, in order to subject him to the environment which, acting through the same period of time, has produced his antithesis, the typical *méridional*, swarthy, impulsive, voluble, quick. Such a change must obviously involve an alteration in the man's whole being. The nature, as well as the force, of the stimuli to which he normally reacts are changed, and every cell in his body experiences sensations so new as in their sum to amount to a revolution. We have only to consider that his altered environment would in a few generations transform this Scot into that Italian to realise the ferment, one might almost say the chaos, which this sudden transplantation must effect upon the workings of his internal economy. It is as if we were suddenly to place a seaweed in a greenhouse.

We are as yet unacquainted with, we can at best vaguely conjecture, which it is amongst the various elements which go to form what we call climate that takes the leading part in producing or initiating changes so profound. A great French climatologist when asked, "What is climate?" replied, "Humidity." This is true, but in a limited sense only. It is true that humidity supplies the keynote to the subjective effects of climate and therefore to its immediate results (a climate, for example, is sedative or bracing, according to whether its humidity is high or low), but it is not true of its remote or permanent effects. Of humidity it cannot be said that it affords any explanation whatever of the racial and national distinctions which have just been touched upon, distinctions of which, if they are to teach us anything, climatic considerations must take full and explicit cognisance.

To contemplate these distinctions is to be immediately struck by the paramount part played by the element of colour. The widest differences in the degree of dermic pigmentation are associated with the most striking diversities in other directions, osseous, nervous, intellectual, temperamental, and it is not unreasonable to suppose that the factor which produces the one should be to some extent responsible for the others. This factor is admittedly the influence of the sun, to which we may accordingly look for some assistance in explaining the complicated phenomena with which we are at present concerned. To read the riddle of the sun as it affects human beings is a task as much beyond my compass as it is beyond my powers, but this at any rate I would venture to say of it—that the key to that riddle, if it is ever to be found, must be sought primarily in the large, important, and unduly neglected organ which we call the skin.

The functions of the skin, we are told, comprise protection, sensation, secretion, heat-regulation, and respiration. A little consideration will, I think, suffice to persuade us

[1] Dr. Gaston Sardou: Revue de Médecine, Jan 10th, 1907, L'être Vivant et les Variations du Milieu Extérieur.

that it is endowed with at least one other, and that other no less important than any of the foregoing. The amount of pigment in the skin varies directly with the degree of sunlight to which its wearers are exposed. A large amount of pigment is thus obviously protective, and the question which immediately arises is, "Protective of what?" Of mere sensation it cannot be: first, because the skin in its power of developing callosities and increasing the growth of hair is already adequately protected in that direction; and, secondly, because ordinary sensation being so unevenly distributed over the integument we should expect the protective pigment to be patchy, even as the protective callosities and protective hairs are patchy, in their distribution. In order to explain the uniformity of pigmentation we must find some function of the skin as a whole which demands protection from the excessive action of the sun's rays, and this, it seems to me, can only be done by investing the integument with the properties of a sensitive plate, stimulation of any portion of which will produce reflex activities in some distant organ. Such a conception has the merit of illuminating some obscure places, and serves in a measure to explain some of the phenomena upon which we are engaged. The pigmentation itself being merely protective, the variations in its degree would necessarily be accompanied by variations more or less constant in other directions, and this we know to be the case. The integument thus becomes the receiving plate for stimuli which are carried to organs which preside over modifications of structure, and of these organs certainly the most important are those glands, the thyroid, the suprarenals, the pituitary, the testicle, and others, the study of whose internal secretions has recently opened up such a wide and fascinating field for physiological inquiry. So far as their importance in the matter of external conformation is concerned, I need do no more than refer to the consequences of the absence of thyroid secretion in the causation of cretinism and most forms of infantilism, and to the responsibility of the pituitary for acromegaly and most forms of gigantism. That cutaneous stimulation provokes a corresponding stimulation of these internal secretory glands, and that one, at any rate, of the purposes of pigmentation is to protect these glands from an excess of such stimulation—such is the view which I am venturing to suggest to you. The considerations in support of this view are many, but time compels me to limit myself to a few only.

It is well known that the white man cannot live for more than a generation or two in the tropics, and it is equally well known that the black man cannot live for more than a generation or two in the temperate zone. In the one case this is due to excessive stimulation from which the fair skin is unable to protect the internal secretory glands; in the other it is due to inadequate stimulation; the feeble and infrequent sun's rays cannot penetrate the pigmented skin in a degree sufficient to keep the glands up to the level of their normal activities. In each case individuals may survive, families very seldom, and races never. It is significant that the individuals among the whites who most successfully adapt themselves to tropical conditions invariably develop a degree of pigmentation which in some cases is truly surprising, and it is pertinent to note that disorders of the internal secretory glands, the suprarenal, the thyroid, and the ovary, are generally characterised by abnormalities of dermic pigmentation.

If, now, we bring the argument down to a particular case and consider the effects of climate upon one of these internal secretory glands, the thyroid, we shall find that the subjects of thyroid insufficiency, as evidenced by rickets,[2] adenoids,[3] noctural enuresis,[4] simple goitre,[5] and some forms of chronic arthritis,[6] preponderate enormously in the temperate zone, and especially in those parts of the temperate zone which are characterised by a cold, damp climate, which is another way of expressing a climate which is conspicuously devoid of sunshine. The same diseases, and others which are almost certainly the results of the insufficient defensive action of these internal secretory glands, are known to occur with obstinate frequency in the poorer populations of the great cities—populations, that is, whose unfortunate state deprives them of many things, but especially, and markedly and perennially, of the influence of the sun's rays.

I am, however, very far from wishing to suggest that solar stimulation is the only form of stimulation which, acting on the cutaneous sensitive plate, is capable of keeping the glandular secretions at the level of their optimal activities and their normal interbalance. I have little doubt, for example, that the action of the air itself when allowed to reach the integument plays an important part in this matter, and that the preposterous habit of wearing flannel next the skin, which is so common among the inhabitants of cold, damp climates, inasmuch as it prevents the air from coming in contact with the cutaneous surface, is responsible for much of the physical and mental degeneracy which characterises those who descend to this practice.

We may obtain some further support for the view which I am suggesting by considerations drawn from another branch of our work, namely, balneology. And by balneology I must be understood to include massage, heat, light, and the other accessories to balneary treatment proper, of which the spa physician rightly avails himself.

About the year 1840 an ignorant and illiterate Silesian peasant of the name of Priessnitz attained to world-wide reputation as a healer of all forms of disease, acute and chronic, specific and metabolic, medical and surgical, by the employment of methods which we now call hydrotherapeutic. The undoubted success of these methods, more especially in certain classes of disease, led to their study and investigation by serious physicians in Germany and elsewhere, with the result that they have gradually been placed upon a scientific footing. And yet not quite. Much has been done to sift the corn from the chaff, to provide indications and contra-indications, to devise improvements and discard superfluities, but up to the present no one has succeeded in offering any acceptable explanation as to the physiological paths by means of which these results are obtained. One, in the pride of his ignorance, will assert that it is all due to change, another that it is the flushing effect of concomitantly ingested waters, a third that it is all a question of suggestion. It is not necessary to take these so-called explanations seriously, and I mention them only for the purpose of pointing out that they contain that element of half-truth which is ever the worst travesty and the greatest enemy of the whole truth. The problems which await solution are serious problems, which cannot thus summarily be brushed aside. We have to explain, and until and unless an explanation is forthcoming, we must continue to suffer the reproach of empiricism to which I referred at the outset; we have to explain, I say, how it is that substantially the same methods of treatment influence such diverse maladies as rheumatism, scrofula, anæmia, neuralgia, obesity, cardiac insufficiency, renal inadequacy, hepatic inadequacy; and even such mutually exclusive diseases as gout and rheumatoid arthritis. The balneary procedures which are employed in these cases are very properly subject to considerable modifications according to the type of invalid and the nature of his malady, but they have, at any rate, this one great feature in common, that they stimulate the cutaneous surface. To say that this stimulation of the cutaneous surface acts by increasing metabolism does not advance us much further, for it does not explain which of the functions of the skin it is which is instrumental in effecting the alteration in the blood-plasma, which is surely the method by which the improvement is ultimately brought about. If, as I have already suggested, we invest the skin with the functions of a sensitive plate receiving impressions, solar, aerial, tactile, thermal, from without, which it transmits as stimuli to the internal secretory glands, the thyroid, the suprarenal, the pituitary, and their congeners, we have at once the key to that improvement in the state of the blood-plasma upon whose cardinal importance in all matters metabolic Dr. Harry Campbell[7] rightly insists.

That we do not know very much about the action of these internal secretions is all too true. We know something about each of them individually, perhaps, but we know little or nothing about the factor in the situation which is in all probability the most important—namely, the interdependence of these secretions and the result of upsetting their normal relations to one another. The difficulties which are liable to

[2] Marfan: Le Rachitisme, La Semaine Médicale, Sept. 18th, 1907.
[3] Leonard Williams: Adenoids, Nocturnal Enuresis, and the Thyroid Gland (Bale and Sons).
[4] Ibid.
[5] Batty Shaw: Organotherapy, p. 64.
[6] Nathan: American Journal of the Medical Sciences, June, 1909.
[7] Harry Campbell: The Rôle of the Blood Plasma in Disease, THE LANCET, Feb. 2nd, 1907, p. 313 et seq.

occur at the menopause afford some clue to the importance of this side of the question, but precise information is wanting. The materials at hand are nevertheless sufficient to afford us some assistance. What we know of the thyroid, for example, amply suffices to raise our estimate of its tribute to the blood-plasma to the level of one of the most essential of the many important constituents of that complex fluid. Its complete absence means cretinism in infancy and myxœdema in adult life; that we know, but we are only just beginning to realise the effects upon the organism when this internal secretion, though present in sufficient amount to protect us from these gross and obtrusive diseases, is nevertheless so diminished as gravely to interfere with the normal metabolic processes. I venture to suggest that investigation in this difficult, but highly attractive, field would reveal the fact that many of the diseases which we now regard as having nothing in common except their amenability to balneary therapeutics would be found to be the dissimilar children of the same parent, and that parent thyroid inadequacy.

To illustrate this point, I select the example to which I have already referred—namely, that two diseases which are to all appearances mutually exclusive, namely, gouty arthritis and rheumatoid arthritis, may in some measure at any rate be brought within the same category by regarding them both as due to perversion or insufficiency of the internal glandular secretions. Of rheumatoid arthritis it is necessary that I should premise that I regard the condition so described as liable to be provoked by a great number of causes, that it is in fact not so much a disease as a symptom, and it is therefore necessary that I should specify what in the present connexion I include under this name. The variety to which I wish to refer is that which occurs with such frequency in women at or about the menopause, the variety, that is, to which Nathan has given the name of metabolic osteo-arthritis. That this is due to a disturbance of the inter-relation between the internal secretions is obvious, and is indeed admitted by all recent investigators;[8] that it is due to a failure of activity on the part of the thyroid is a thesis which has been sustained by numerous observers[9] in France, and recently very ably by Dr. Ménard of Paris;[10] that clinical results strongly support this pathology of the affection is evidenced by the decided amelioration which ensues from the exhibition of thyroid extract, a matter to which I can add the testimony of my own experience.

In the case of gouty arthritis not only do we find it in subjects who bear the stigmata of thyroid inadequacy, the subjects, that is, of premature baldness, of neuralgiæ of all sorts, of constipation, but the disease is admittedly one of inadequate metabolism. Now conditions of inadequate metabolism cannot co-exist with a normally acting thyroid, for again, to quote from the elegant and attractive writings of Dr. Harry Campbell,[11] "The thyroid secretion plays the part of a bellows, causing the vital fire to burn more fiercely." Moreover, the admitted causes of gout, an excess of meat foods and alcoholic drinks, are likewise admitted as poisons which gravely depress the functions of the thyroid.

Here, then, are two diseases which, though widely dissimilar in many, and perhaps in the most important, respects, have nevertheless three points in common: both are characterised outwardly by an arthritis, which affects the same joints in much the same manner; both can be shown, and have been shown, to be accompanied by an insufficiency of thyroid secretion; and in both stimulation of the skin by baths, douches, heat, light, produces an amelioration which experience proves to be beyond all question or cavil. There seems to be no escape from the conclusion that, so far as the arthritic element is concerned, the responsibility must rest with the thyroid, nor that the amelioration which all concur in conceding to the balneary procedures is brought about by the stimulation of that gland.

Before leaving the question of the thyroid there are some other facts to which it seems pertinent to refer. The first of these is that since the discovery of radio-activity every spa in Europe has been busily engaged in demonstrating that its waters contain a certain measure of this peculiar unknown property, quite irrespective of the results which may ultimately be shown to attach to the exposure of the human body thereto. Now, out of the chaos of hypothesis, romance and heroics, which have already encrusted the subject, one fact, and one fact only, has so far emerged, and that is the fact established by a French observer, to the effect that radio-active waters produce an enlargement of the thyroid gland.

Another point of interest in this connexion is furnished by the relation of the thyroid gland to the salts of calcium. It is known that one of the functions of the gland is to fix these salts in the body, and further investigations into the matter have shown, as indeed one would expect, that the exhibition of these salts stimulates thyroid activity. One of the first signs of increased thyroid activity is diuresis, and I may mention parenthetically that when I was a practising balneologist I learned to gauge the measure of the ultimate success of my prescriptions by the degree of urinary activity which they evoked. Now, in the matter of ingested waters, it has always been difficult to understand why it is that the renal spas, Contrexéville, Vittel, Martigny, Evian, Wildungen, whose waters, chemically, contain nothing more diuretic than small quantities of calcium salts, should nevertheless have the power which they undoubtedly possess of provoking a very largely increased urinary output. In the light of the above-mentioned facts it is evident that this power is derived in a large measure from the stimulation of the thyroid gland which these calcium salts excite.

Of interest also in association with the thyroid gland are those spas which lay claims to the cure of sterility in women. These claims are strongly supported in too many instances to permit of reasonable doubt as to their justice, and Franzensbad, Kreuznach, Rheinfelden, Schinznach, Eaux Bonnes, St. Sauveur, and Salies de Béarn, to mention a few only, all enjoy a reputation in this direction which is unquestionably well founded. Some of them, indeed, include instances which are historical. But here, again, the causative factor has always remained a mystery. Where local douches are employed it is easy to understand that they may be helpful; but then, not only may local douches be employed at home, but local douches were unknown at many of these spas until long after their reputation in the cure of sterility had become firmly established. They have, however, all of them made a special feature of general baths, general douches, and the other methods of stimulating the cutaneous sensitive plate, by which means I suggest that the internal secretory activities are evoked. That it is the thyroid which is chiefly appealed to by such means is rendered probable by the very conspicuous involvement of the skin and its appendages in myxœdema and in degrees less pronounced of thyroid inadequacy. That the thyroid is a gland whose activities are essential to pregnancy is well known,[12] for one of the most efficient means of treating sterility is by properly regulated thyroid treatment,[13] and the reason for this was provided by Gaskell[14] when he showed that the thyroid gland of vertebrates is derived from the uterus of the palæostracean ancestor.

From consideration of the thyroid, too, we may obtain much instructive information concerning another subject which looms large in the purview, not only of every health resort physician, but of every practitioner of medicine, a subject of which it is safe to say that more nonsense of a pseudo-scientific kind has been written than upon any other topic in the whole range of medicine—I mean diet. This is neither the time nor the place to embark upon a discussion of the matter, but this, at any rate, I am prepared to assert, that the explanation of all the numerous meat-excluding dietaries is based on the fact that their apostles and disciples suffer from diminished activity of the thyroid gland upon which meat foods are known to act so as still further to diminish its activity.

But while thus drawing some illustrations from the thyroid gland, I must not be understood to suggest that this is the only secretory organ which is stimulated by the various methods under consideration. Such a narrowing of the issue is very far from my intention. The other glands which we include in the same category are probably of at least equal importance, but the available facts concerning

[8] R. Llewelyn Jones: Arthritis Deformans, p. 227 (John Wright).
[9] Léopold-Lévi and H. de Rothschild.
[10] Origine Thyroïdienne du Rhumatisme Chronique Progressif et Deformant, Thèse de Paris, 1908 (Baillière).
[11] Harry Campbell: THE LANCET, May 24th, 1902, p. 1486, et seq.
[12] Cardiopathies of the Menopause, Clinical Journal, March 3rd, 1909.
[13] Hertoghe.
[14] The Origin of the Vertebrates, p. 216.

them are at present scarcely such as to lend themselves to illustration. A few, nevertheless, there are.

To return for a moment to the question of dermic pigmentation, to which I referred at the outset, it is obvious that, judging from pathology, it is to the suprarenals that we must look for the greatest power in this direction. It is well recognised that when these glands are profoundly disturbed, as in Addison's disease, the fairest of northern skins is made to assume the dusky tint of the mulatto. But the suprarenals do not bear the sole responsibility for pigmentary activity. We know that utero-ovarian disturbance may produce chloasma and that Graves's disease and rheumatoid arthritis are almost invariably accompanied by abnormal pigmentary phenomena. Nor is it, in truth, necessary to interrogate pathology on this subject, for physiology is ready with an illustration which is sufficiently striking. The blood, which we know to be manufactured in some of these internal secretory glands, has a pigment peculiar to itself, and significantly enough its colour is precisely that which is employed by the photographer in order to protect his sensitive plate against the action of the actinic rays of the sun. That one at any rate of the purposes of the red corpuscles is to afford a similar protection to some of the internal organs must be perfectly obvious to anyone who considers the matter.[15]

But it is useless to multiply instances of the association of individual internal secretory glands with the subjects with which we are engaged, for I regard as infinitely more important to a true appreciation of the whole question a realisation of the power which these glands exercise over one another. That they stand to one another in a position of physiological antagonism, and that the smooth and sufficient working of each is essential to the prevention of excess or perversion in one or some others, and thus to the plasmic equilibrium of the whole body, is now well recognised by all observers in this field.[16] This reciprocal action of the various internal secretions, this interglandular synergy—the process, that is, by which each contributes its due share, and neither more nor less than its due share, to the blood plasma—constitutes a factor of the utmost importance in the production and maintenance of what we call health, the condition which all can appreciate but none can define. And in my desire to emphasise this aspect of the matter I would venture even further, and suggest to you that in the exact proportional representation of these glands in the individual economy is to be found the secret of those subtle yet salient differences of character and temperament which distinguish the man of action from the man of thought, the scientist from the poet, the ascetic from the voluptuary. That cosmic influences determine the production of certain of these types is suggested by the fact that so many of any particular type tend to appear on the world's stage at about the same time, as witness the Augustan and Elizabethan periods in literature, the Napoleonic in men of action, and the Victorian in men of science; and that climate may have a determining voice in shaping the cosmic influence is rendered probable by the fact that a large proportion of the great men of any particular epoch are drawn from the same country. It is a fascinating, even though it be a futile, speculation to think that with a little more of this internal secretion or, perchance, a little less of that, General Boulanger might have been a Cæsar; that with an infinitesimal difference in the admixture of these elusive essences Charles II. might have been a Puritan. A more practical application of the same idea, more especially having regard to Gaskell's work on the thyroid, is that the determination of sex in the fœtus may be found to be governed by internal secretory considerations.

But to return to the questions of climatology and balneology, from which I have already too widely strayed, it might conceivably be urged that inasmuch as the pharmacist supplies us with reliable preparations of these internal secretory organs, the practice of balneary and kindred procedures will ultimately become displaced by organotherapy. This is a proposition which I find it very difficult to accept. If it is possible to foretell anything about the future of medicine, it is surely safe to predict that in moving away from mere drug therapy, as we are steadily doing, we are following an orderly scientific evolutionary movement. Our ideals are less and less in the direction of curing disease, for in its presence, when once established, we realise that we are for the most part merely enlightened onlookers, and our endeavours tend in consequence more and more in the direction of preventing, evading, and forestalling disease. It is our aim rather to correct nascent or acquired tendencies than to cure established ills, and when we have succeeded in educating the public to this view of our mission, the day of the climatologist, and perhaps more especially of the balneologist, will be at hand. Of the medical triumphs of the immediate past, the most conspicuous and enduring are those which have been won in the field of public prevention, and it is my firm belief that the most conspicuous triumphs which await us in the immediate future will be won in the field of individual prevention. In this field the most effective weapons are those which we are here to study, to advocate, and, if need be, to defend; and so long as we pursue our ideals in the true spirit of scientific inquiry, so long will this section of the Royal Society of Medicine continue to increase in prosperity and to advance in dignity, in worth, and influence.

[15] Watkins-Pitchford, Brit. Med. Jour., August 21st, 1909, p. 442.
[16] Renon and De Lille: Comptes Rendus de la Société de Biologie, ome lxvi., Jan. 22nd, 1909. Leopold Levi and H. de Rothschild: loc. cit.

THE NEED FOR LEGISLATION IN REGARD TO ANÆSTHETICS, AND THE LINES UPON WHICH IT SHOULD TAKE PLACE.*

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I AM glad to have this opportunity of tendering my best thanks to the Council of this society for the honour they have done me in suggesting that as a visitor I might bring before you the important question of the desirability of legislation in regard to anæsthetics. You will, I am sure, realise that this question has a far wider range than at first sight appears, for it is intimately associated with that greatest of all questions to our profession—the suppression of unqualified practice in general. I do not propose to enter into the causes which have led up to the unsatisfactory state of the department of practice with which I am about to deal. The phenomenal advances which have taken place in surgery proper during the past 30 years have left the problem of safe anæsthesia in the background, and it is only quite recently that a movement has been inaugurated to give this problem the prominence it deserves. Whatever means be chosen to prevent pain during a surgical operation, be it one of the greatest magnitude or one of so-called minor importance, the administrator of the anæsthetic takes upon himself two responsibilities. The first of these is towards his patient, whom he should provide with safety and comfort during what must always be an unpleasant ordeal; the second is towards the operator, whom he should provide with the best possible local conditions for the particular operation. Speaking generally, I would submit that the importance of the anæsthetic as a factor in surgery is not sufficiently realised. Day after day the public mind is perturbed by announcements of deaths under anæsthetics, and yet no united efforts are made to reduce the distressing mortality from these agents. That the mortality can be reduced I most unhesitatingly affirm. I believe, indeed, that had a proper share of attention been devoted to anæsthetics when modern surgery first took form, thousands of human lives would have been saved, and what is almost as important for the future progress and scope of surgery, the acute public alarm which now prevails with regard to anæsthetics, and which obviously is limiting the beneficent work of our profession, would never have become established. And

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here let me say that the proposals I am about to place before you have as their sole object the interests of the public whom we serve, and that they are not intended to benefit the medical profession, the dental profession, or any special department of either. Experience has proved that the risks and discomforts of anæsthetics may be reduced to trifling proportions by the recognition and adoption of proper principles of anæsthetisation, and that such principles may readily be acquired by the rank and file of our profession.

What is the present state of things as regards the administration of anæsthetics in this country? The fact is that the law allows any person whatsoever to administer an anæsthetic for a surgical operation, provided his intentions are good, and that he performs his task to the best of his abilities. It is also legal for any person first to administer an anæsthetic and then to perform an operation upon the patient he has thus rendered unconscious, provided, as before, that his motives are good, and that he does his best for his patient. I need hardly say that in circumstances such as these numerous fatalities have occurred, particularly amongst the poorer classes. At one inquest it was shown that an advertising herbalist had administered chloroform to a healthy servant girl almost immediately after her dinner, and had himself attempted to extract a tooth. At another inquest upon a girl, aged 17 years, who died under nitrous oxide gas administered by an unregistered dentist, the jury expressed the opinion that an anæsthetic should not be given by an unqualified person—a pronouncement which led to a question being asked in the House of Commons, but to nothing more. At another inquest a quack dentist, whose patient died under the influence of ethyl chloride, gave evidence to the effect that he had used this anæsthetic over 1600 times; that 5 cubic centimetres constituted an ordinary dose; that he did not know what 5 cubic centimetres meant; that he was not guided by the patient's condition but by looking at the bottle; and that he did not know how to perform artificial respiration. As regards the dangers of local anæsthetics such as cocaine and its allies I have only to remind you of a case where an unregistered and unqualified dentist caused the death of a patient by injecting cocaine into the gum whilst he performed a dental operation to prove to you the need of some legislative protection for those who from ignorance place themselves in such hands. In those instances in which coroners' juries have committed persons for trial on charges of manslaughter the cases have either been dismissed or the judge, in summing up, has pointed out that the prisoner was fulfilling a useful function amongst the poorer classes. In addition to the dangers to which the public are exposed whilst actually under treatment by unregistered dentists, their lives are not infrequently threatened whilst returning to their homes, or subsequently, by alarming symptoms of cocaine poisoning, by profuse hæmorrhage resulting from reckless extractions, or by septic poisoning, often culminating in necrosis, dependent upon the use of unclean forceps and syringes. Time will not permit me to lay before you documentary evidence in my possession proving the reality of these dangers and the need for legislation. Only last week you may have observed in the public press an instance of a case in which a patient nearly lost his life as the result of unskilful treatment by an advertising dental company. The widespread use by advertising and unregistered dentists and dental companies, not only of local but of general anæsthetics, is, I submit, a matter for the serious consideration of our profession, for it brings into the practices of these dangerous charlatans thousands of persons who, were they not tempted by the expressions "painless dentistry" and the like, would certainly find their way to reputable registered dentists and thus avoid the dangers to which I have alluded. Moreover, the use of anæsthetics by quacks favours the perpetration of many a nefarious surgical procedure and the occurrence of many a surgical disaster. This is seen, not only in the practice of the quack dentist, but in that of the bone-setter. If such irregular practitioners were prevented by law from administering anæsthetics or having them administered for them a lasting benefit would be conferred upon the public, and surgery would be deprived of much of that discredit with which its name is sometimes associated.

Passing to reputable medical and dental practitioners, we find a state of things which, though immeasurably superior so far as the professional spirit is concerned, leaves much to be desired. This is particularly the case in dental practice. Single-handed anæsthetising and operating are extensively resorted to in provincial towns and country districts. Sometimes the "gas" or other anæsthetic is entrusted to a workroom assistant, a maidservant, or even a page-boy. It would, however, be unfair to throw upon the present dental profession the onus of conditions which came into being in the middle of last century. At the last meeting of the British Dental Association at Birmingham I brought before that association the scheme which forms the basis of my present paper, but I regret to say that the majority of those present were opposed to the reforms suggested. I trust, however, on this occasion, by means of statistics which I have recently been collecting, to supplement the arguments I then brought forward. To these statistics I shall presently refer. Coming to general surgical practice I must content myself by saying that a great many improvements in the department of anæsthetics are still urgently required. At some of our hospitals there is a deplorable inadequacy both in *personnel* and in general equipment in this department. In private practice, particularly amongst the middle and poorer classes, the anæsthetic is often so inadequately given that the surgical success of cases is jeopardised. That there are special circumstances under which the double responsibility of anæsthetising and operating may, and should, be undertaken is obvious. But, as I have elsewhere shown, there is incontrovertible statistical evidence of the danger of such a practice, particularly in the hands of non-medically qualified persons.

If it be the great function of our profession to preserve human life, surely it is high time to take some steps towards improving the conditions under which anæsthetics are administered. The proposition I would here submit to you is that the whole system of anæsthetic administration requires to be reorganised from its foundations. We must start from below and suppress unqualified practice in anæsthetics, or we shall never rob anæsthesia of its present perils to the poorer classes and of that discredit into which it has been allowed to fall. We must call upon our legislature to protect the public by some enactment which will prescribe who shall and who shall not administer an anæsthetic for a surgical operation. There is, of course, no reason whatever why reforms in our hospitals and schools should not be pushed forward *pari passu* with requisitions for legislation; but until legislation has been secured and the line drawn between those who should and those who should not conduct anæsthesia the safety of the public will be threatened and the position of this department of practice will remain degraded. The administration of an anæsthetic is essentially a medical function, and, as I have before indicated, the question as to who should conduct such an administration is part and parcel of the vital question now engaging the attention of the General Medical Council—that of the prohibition of unqualified practice in general. But the specific question before us is too pressing to be deferred till the main question assumes concrete form. Anæsthetics are now being used upon such a vast scale throughout the United Kingdom that some legislative enactment concerning them would constitute a fitting instalment to the more comprehensive measure which we hope to see introduced at no distant date. According to the report and appendices of the Unqualified Practice Prevention Committee of the General Medical Council which appeared last year,[1] there are only about 10 of 107 colonies and countries which do not protect the public against unqualified practice, and Great Britain is amongst this 10 per cent. minority. In no less than 75 of these 107 colonies and countries the practice of medicine by those not legally recognised as qualified persons is absolutely forbidden. It is interesting to note that in Germany—the only European country besides our own which does not prohibit unqualified practice—there is a projected Imperial Bill which, if passed, would go a long way towards correcting such an anomaly, and the administration of general anæsthetics is specifically referred to in this Bill. In Austria, moreover, special regulations have recently been issued by the Home Secretary with regard to single-handed anæsthetising and operating.

[1] THE LANCET, Jan. 23rd, 1909, p. 249.

Now although it is generally agreed that there is a good case for legislation in regard to anæsthetics, it must be remembered that it is by no means an easy matter to draft a measure which will bring about the desired objects without interfering with those public and professional interests which deserve to be safeguarded. The General Anæsthetics Bill now under the consideration of the Departmental Committee on Coroners' Law[2] has as its main principle the restriction of general anæsthesia, however induced, to legally qualified medical practitioners, although it proposes to allow registered dentists in practice at the passing of the Act to continue to administer general anæsthetics if they so desire. At the recent meeting of the British Dental Association at Birmingham I endeavoured to prove that by supporting such a Bill the dental profession, instead of losing anything, would greatly gain, for as no unregistered dental practitioner would be entitled to administer a general anæsthetic or to have one administered for him the services of registered practitioners would be requisitioned on a far larger scale than at present, whilst the improved conditions under which dentists would operate and the reciprocity which would be established between medical and dental practitioners would be greatly beneficial to the latter. With a few exceptions, however, the members of the association who were then present were unable to see their way to support the proposals put forward, maintaining, in a resolution, that registered dentists were fully competent to administer anæsthetics for dental operations. The resolution in question protested "against any legislation which would make it illegal for registered dentists to administer anæsthetics for dental operations." It was contended that any such legislation would not be "in the best interests of the public." Now, it seems to me that those who were responsible for the drafting of this resolution must either have been unaware of the fact that the great majority of provincial dentists are single-handed, and therefore would, under the policy embodied in the resolution, administer general anæsthetics and also operate, or they must have shut their eyes to the dangers and disadvantages of this practice, accepting these, so to speak, in preference to the alternative policy laid before them —that of placing general anæsthetics in the hands of medical men and of ensuring that when a patient is rendered unconscious, even for a dental operation, he shall always have two competent practitioners present. I have elsewhere shown by some striking statistics that the practice of anæsthetising and operating single-handed is highly dangerous and I do not see how any individual or any body of professional men can countenance it. This is one of the main points I wish to place before you this evening. I am glad that the Departmental Committee now sitting is fully alive to this particular danger. Curiously enough the accredited representative of the British Dental Association, when giving evidence before this Committee deprecated the practice in question. More curious still, perhaps, is the fact that a distinguished anæsthetist in attempting to explain to the Committee how, on the one hand, he could support the claims of dentists to administer nitrous oxide, whilst on the other, he could not support the practice of administering and operating single-handed, made the statement that most dentists in the country had partners, by which statement he obviously implied that registered dentists were able to administer anæsthetics for one another. Surely he was in ignorance of the true facts of the case. According to the "Dental Directory" just published, there are no less than 373 small towns or districts in the United Kingdom possessing only one registered dentist each, so that in such towns this coöperation between registered dentists is obviously out of the question.

As regards the conditions of dental practice in larger provincial towns, I have, by the kind assistance of numerous friends, collected some interesting information. The following is an alphabetical list of 48 towns, scattered throughout the United Kingdom, in which inquiries as to the conditions of registered dental practice have been conducted: Aberdeen, Aberystwyth, Armagh, Ballymena, Bath, Bedford, Belper, Boston, Bournemouth, Brighton, Bristol, Brixham, Cardiff, Carnarvon, Cheltenham, Chepstow, Deal, Dumfries, Exeter, Falmouth, Galway, Gateshead, Gloucester, Greenock, Ipswich, King's Lynn, Kingstown, Leigh (Lancs.), Limerick, Llandrindod Wells, Ludlow, Newton Abbot, Nottingham, Oxford, Paignton, Penarth, Reading, Ryde, Selby, Sleaford, Swansea, Taunton, Teignmouth, Torquay, Tralee, Trowbridge, Truro, and Wick; and the subjoined table gives the results of these inquiries:—

Table showing Conditions of Registered Dental Practice in 48 Towns scattered throughout the United Kingdom, the Population of which varies between 342,388 and 1827.

A	
Total population of the 48 towns	2,138,130
B	
Total number of registered dentists (excluding registered or qualified assistants) in practice in the 48 towns	482
C	
Ratio between registered dentists in practice and population	1 registered dentist to every 4435 persons.
D	
Total number of registered dentists in practice by themselves in the 48 towns...	352
E	
Percentage-ratio of dentists of Group D to those of Group B	73
F	
Total number of registered dentists in partnership in the 48 towns	99
G	
Percentage-ratio of dentists of Group F to those of Group B...	20·5
H	
Total number of registered dentists in the 48 towns practising with registered or qualified assistants (excluding the latter)	31
I	
Percentage-ratio between dentists of Group H and those of Group B...	6·5

It will be seen that the population covered by the inquiry is, roughly, 2,138,000; that the registered dentists available for this population (excluding registered or qualified assistants) are 482 in number, or 1 to every 4435 persons; that 352 dentists, or 73 per cent., practise by themselves; that 99 dentists, or 20·5 per cent., are in partnership; and that 31 dentists, or 6·5 per cent., practise with registered or qualified assistants. Even if we add together the dentists in partnership and those practising with registered or qualified assistants (making 130 in all) they only constitute 27 per cent. of the total number. In other words, so far as these 48 towns are concerned, there are no less than 73 per cent. of the registered dentists who, under the present system, must either (*a*) give anæsthetics themselves and operate; (*b*) obtain some unqualified person, such as a workroom assistant or a domestic servant, to administer the anæsthetic, both of which practices are admittedly reprehensible; or (*c*) call in medical men to act as anæsthetists. I leave it to this meeting to decide which is the right and only course to be adopted. It is interesting to note in this connexion that the medical men in practice in the 48 towns above specified number 2108; in other words, that there are in these towns 4·3 medical men to every registered dentist. I have been unable to obtain any reliable statistics as to the number of unregistered dentists practising in these towns, but there is ample evidence to show that the number is a large one. That any hardship whatever would be inflicted upon that one registered dentist with a potential practice of over 4000 persons by placing at his disposal the services of a medical man to administer his anæsthetics seems to me impossible to conceive. I should rather be inclined to believe that, as matters now stand in regard to anæsthetic administrations, his practice is prevented from rising to its proper level. If there is in certain towns, as I am given to understand there is, keen competition between registered and unregistered dentists, surely the association of medical men with the former would help the public to distinguish them from the latter, with whom any such association is, as you are aware, contrary to the regulations of the General Medical Council.

I must here refer to some extraordinary remarks just made by Sir Victor Horsley before an audience largely composed of

[2] *Vide* First Report, Part II., p. 220.

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dentists and their friends. Under the erroneous impression that he is doing a service to the dental profession, he is, I submit, proposing a great disservice to the public. After mentioning the circumstance that one of our licensing bodies has recently made a course of instruction in anæsthetics an essential part of the dental curriculum—a circumstance which many, I believe, regret, but one which, after all, hardly obliges the recipients of such instruction to administer anæsthetics when they pass out into practice—he proceeds to suggest that dental students should be instructed, at general hospitals, in the administration of ether and chloroform, and that chloroform, if administered by certain methods, is a safe anæsthetic. Now I feel compelled to put on record my most emphatic protest against such mischievous doctrines. That the medical boards of our general hospitals would sanction the instruction of dental students in chloroform administration for dental operations I very much question, particularly when the conditions of dental practice to which I have just referred are borne in mind. Personally I should regard such an event as retrogressive and in the highest degree dangerous to the public. Everyone who has ever administered chloroform for an operation within the oral cavity knows perfectly well that it is in these very cases that it is difficult or impossible to apply the percentage methods upon which Sir Victor Horsley lays so much stress. Although I may appear to depreciate the work now being done by the dental profession I have no such intention. I simply condemn certain antiquated and dangerous systems under which they are compelled to do that work—systems that short-sighted persons, under the impression that they are furthering the interests of existing dentists, would like to see perpetuated. After the evidence I have laid before you it is, I submit, clear that the advocates of dentists administering general anæsthetics must, under present circumstances, also be the advocates of single-handed anæsthetising and operating, and if we are, in this twentieth century, to encourage dentists to administer chloroform and then operate, I fail to see that our profession is doing its duty to the public in attempting to reduce the present mortality from anæsthesia.

Having dealt with one of the two main objections which have been advanced against the General Anæsthetics Bill I come to the other objection—namely, that the Bill does not propose any legislative protection against local anæsthetics. This omission was largely due to the difficulty experienced in drawing any hard-and-fast line between the comparatively harmless methods of producing localised analgesia and the more dangerous methods of securing this condition by the injection of cocaine and allied drugs into the tissues of the body. After further consideration on the subject, however, it has been found possible to correct this omission and to modify the General Anæsthetics Bill in the direction indicated. It will be seen that by the subjoined Draft Bill general anæsthetics are, as before, placed in the hands of registered medical practitioners, and that local anæsthetics are placed in the hands of registered medical or registered dental practitioners.

MEMORANDUM.

The object of this Bill is to protect the public, as far as possible, against deaths arising directly or indirectly from the action of anæsthetics—a class of drugs or substances employed for producing either generalised or localised insensibility during surgical, medical, obstetrical, or dental operations, acts, or procedures.

The three following facts indicate the need for this legislative protection: 1. Anæsthetics are for the most part powerful poisons. 2. They are constantly being used upon a vast and increasing scale throughout the country. 3. A considerable and increasing number of fatalities are annually taking place in connexion with their administration.

The promoters of the present Bill are of opinion that the solution of the problem of reducing the number of deaths wholly or partly referable to anæsthetics is to be found in a careful study of the circumstances and symptoms which have attended the deaths hitherto recorded. Such a study seems to them to indicate that anæsthetics, when employed for the above-named purposes, should be administered only by certain persons. This Bill therefore proposes to make it a penal offence for any person other than the persons herein specified to administer for the purposes above mentioned either any general anæsthetic or any local anæsthetic by the means described.

ANÆSTHETICS ACT, 1912.

An Act to Regulate the Administration and Employment of Anæsthetics.

Be it enacted by the King's Most Excellent Majesty by and with the advice and consent of the Lords Spiritual and Temporal and Commons in the Present Parliament assembled and by the authority of the same as follows:—

1. Any person other than a legally qualified medical practitioner registered under the Medical Acts who shall wilfully administer or cause to be administered to any other person by inhalation or otherwise any drug or substance whether solid, liquid, vaporous or gaseous and whether pure or mixed with any other drug or substance with the object of producing a state of unconsciousness during any surgical, medical, obstetrical or dental operation, act or procedure, or during childbirth, shall be liable on conviction before a Court of Summary Jurisdiction for such offence to a penalty not exceeding £10 and in the case of a second or subsequent conviction to a penalty not exceeding £20, provided always that a person shall not be liable to a penalty under this Section if in conducting such administration he was acting under the immediate direction and supervision of a legally qualified medical practitioner, or if the circumstances attending the administration were such that he had reasonable grounds for believing and did believe that the delay which would have arisen in obtaining the services of a legally qualified medical practitioner would have endangered life, or if having been registered under the Dentists Act 1878 before the passing of the present Act he conducted such administration for a dental operation, act or procedure.

2. Any person other than a legally qualified medical practitioner registered under the Medical Acts who shall inject, insert, or introduce or cause to be injected, inserted or introduced into any tissue or tissues of the body of any other person through a puncture, incision or other breach of surface any drug, medicament, or substance, whether solid or liquid, and whether pure or mixed with any other drug, medicament or substance with the object of producing a state of localised insensibility to pain without unconsciousness during any surgical, medical, obstetrical or dental operation, act or procedure or during childbirth shall be liable on conviction before a Court of Summary Jurisdiction to a penalty not exceeding £10 and in the event of a second or subsequent conviction to a penalty not exceeding £20, provided always that a person shall not be liable to a penalty under this Section if in attempting to produce or in producing such localised insensibility he was acting under the immediate direction and supervision of a legally qualified medical practitioner, or if being registered under the Dentists Acts 1878 he attempted to produce or did produce such localised insensibility for the performance of a dental operation, act or procedure or if being a *bonâ-fide* student in dental surgery or dentistry and acting under the immediate direction and supervision of a person registered under the Dentists Act 1878 he attempted to produce or did produce such localised insensibility for the performance of a dental operation, act or procedure.

3. The expression "Court of Summary Jurisdiction" in this Act shall have the same meaning as in Subsection 11 of Section 13 of the Interpretation Act 1899. In Scotland it shall mean any Justice of the Peace and also the Sheriff. The expression "the Medical Acts," shall mean the Medical Act 1858 and any Acts amending the same passed before the passing of this Act.

4. This Act may be cited as the Anæsthetics Act, 1912.

The main principle laid before you this evening, that of restricting the use of general anæsthetics to medical practitioners, has been endorsed by the Medico-Legal Society, whose valuable services in connexion with this proposed legislation I am glad to have the opportunity of acknowledging. The principle would also appear to have been endorsed by the Section of Anæsthetics of the Royal Society of Medicine, although when the matter came up for consideration by that section there were, I regret to say, certain members present who could not see their way to support the principle. Reforms such as those I have indicated naturally require time for their consideration, and I look forward with confidence to the day when all members of our profession will see the necessity of some such scheme as that which I have had the honour of laying before you this evening.

ON CERTAIN B. COLI INFECTIONS.

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IT has been recognised for several years that in some cases the kidneys act as filters through which the body can free itself of the various organisms which produce diseases, and that bacilli and cocci may be eliminated through the urinary apparatus without giving rise to any definite lesion in that tract. To quote a well-known instance, typhoid bacilli may be found in the urine many years after an attack, the host being otherwise healthy. Occasionally, also, tubercle bacilli may be found in the urine of a person affected with tuberculosis of the lungs or other organs, there being no symptoms referable to the urinary system and no lesion being found there subsequently. This is also true for certain cases of pneumococcic and staphylococcic infections. Among the organisms which are found in the urine those belonging to the bacillus coli group occur with great frequency. This condition of bacilluria has attracted considerable attention during the past years and recently several papers have appeared on the subject.[1] These contributions have rather tended to

[1] Bruce Clarke: Clinical Journal, February, 1908. L. S. Dudgeon: THE LANCET, Feb. 29th, 1908, p. 616. C. R. Box: THE LANCET, Jan. 11th, 1908, p. 77.

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differentiate a condition of colon bacilluria as a separate entity, whereas the condition ought to be regarded as only a phase of the infection in which separate stages of varying degrees of severity may be recognised: 1. A stage in which there is the passage of pus in the urine which may be either intermittent and obviously derived from a pocket or abscess cavity, or be continuously present, probably indicating a more widespread infection of the urinary tract. 2. A milder stage in which, as a rule, there is a continuous passage of the bacilli into the urine, but without the presence of pus or cells derived from the epithelium lining the tract. 3. A condition in which there are intermittent discharges of bacilli without cells—i.e., some specimens of the urine will contain no organisms, while others will be found to be loaded. The symptoms correspond in severity, and in the milder forms there may be nothing to call attention to the condition.

The route by which these organisms gain access to the urine is still the subject of controversy, but the view that it is by way of the urethra, and so by direct extension, seems to be most improbable. It should be remembered that the B. coli is a constant inhabitant of the intestine, and it has been shown that organisms can pass through the apparently intact wall without leaving any detectable lesion, and this is facilitated by any condition which produces obstruction to the onward passage of the intestinal contents. It is hardly a matter of surprise, then, that a history of constipation is usually found in these cases, or that a large proportion of them should occur in women.

In the cases where pus is being passed there will be no difficulty in recognising the condition, as the cloudiness or deposit, or both, will at once arouse suspicion, but in examining the specimen from an individual who is passing only the bacilli the following points should be noted. 1. As a rule, the urine is rather paler than would be expected from its specific gravity. The specific gravity shows no peculiarities of itself, but on account of the pallor of the specimen the high urinometer reading comes as a surprise. 2. The urine is acid in reaction, often strongly so. 3. The specimen is not clear and translucent. A kind of haze is present throughout the whole column of the urine. In some cases a cloud, or even a small deposit, of mucus forms at the bottom of the vessel. A slight haze, such as has been indicated above, is frequently present in normal urine and to detect these cases of bacilluria the following simple method can be adopted. A small piece of filter paper is folded in the usual manner and moistened by allowing some water to filter through it into a clean test-tube. This serves two purposes—the filter paper is rendered less pervious and inspection of the filtrate in the tube shows whether the test-tube is clean or not. This latter point is important, as a dirty tube will give the impression of cloudiness in the contained liquid. A small quantity of urine is then filtered into the test-tube. The filter paper allows bacteria to pass through, but holds back most of the other substances which give rise to turbidity; however, red and white blood corpuscles, fat, and occasionally certain fine precipitates do pass through. A warning is here necessary with respect to urines which deposit urates. If such a urine is filtered while it is warm the paper will hold back the urates which are already precipitated, but as the filtrate cools more will be thrown out of solution and will give rise to a haze in the test-tube. This is, of course, immediately dispersed by heating, but it is simpler to cool the urine before filtering as a part of the routine.

When the urine filters clear, there is no appreciable quantity of B. coli present. If, however, the filtrate is cloudy, the next procedure is to put a drop of the urine on a slide, apply a cover-glass, and examine with the microscope. It is not necessary to use a 1-12th oil immersion lens, for the bacilli can be easily seen by the aid of a 1-6th inch objective and a No. 3 eye-piece. It is advisable to cut down the light in the first instance in order to find the focus, after which as much light as is desired can be admitted. If the B. coli are present they will be seen either as round bodies or as short rods, according as they are floating end on or lengthwise, and they can further be seen to be moving briskly. This is in contrast to the appearance presented by cocci or other substances not endowed with the power of locomotion. In the latter case the small bodies may show some movement, but there is no change of position. Some confusion may arise temporarily from the presence of currents in the specimen, but the movement is then in one direction only, whereas the B. coli move continuously and in various directions. The application of a little heat will often increase the motility of the bacilli, and it will also be found that the rapidity of movement varies in different specimens. Should the haze not have been due to this condition, the cause will be discovered at the microscopic examination. Two further steps are advisable but not essential. In the first place a large loopful of the urine may be taken by means of a sterilised platinum needle and gently rubbed over the surface of an agar tube, which is then incubated. At the end of 24 hours or less there will be a plentiful growth, which is opaque and white. The margins of this growth are usually markedly crenated in outline. The second investigation consists in making a film either from the deposit found on standing or preferably from the centrifugalised deposit. The film is allowed to dry, fixed by heat in the usual manner, and then stained by Gram's method and counterstained with carbol-fuchsin or neutral red. The B. coli are decolourised by Gram's method and take up the counterstain—i.e., are seen to be stained red by this method. The urine is best examined as soon as possible after it is passed, directions being given that the parts should be cleansed carefully before micturition; if necessary, and more especially in women, a catheter specimen should be obtained. This method of examination of the urine is also of value in the isolation of the organism for the treatment of certain cases of infection where the discharge proceeds from some site other than the urinary tract, is obviously contaminated, and from which it would take some time to isolate the organism. Two of these cases will be mentioned later.

If urine is examined in this manner a surprisingly large number of specimens will be found to contain the B. coli. Most of these occur in women, and some pathologists go so far as to say that in the female this condition is of no importance; certainly there may be no associated symptoms of disease unless constipation is considered as such. At times, however, there will be headache, slackness, and general malaise. Confinement to bed may cause the passage of the bacilli. To illustrate the absence of symptoms the following instance may be quoted. While examining the urines of several young men for another purpose, in order to obtain a normal standard, one specimen was found to be teeming with these organisms. The individual was in perfect health at the time, and although specimens have been repeatedly examined since the bacilli have never again been found. At the Evelina Hospital for Children during a period of six months the urines have been carefully examined with regard to this point, and B. coli was passed in appreciable quantity in 6 out of 145 cases. In two of these there were no special symptoms, in two others there was an associated condition which might have been described as "febricula," and in the remaining two the symptoms were more severe.

As illustrating the correlation of symptoms with the intermittent passage of organisms the following case is of interest. A girl, aged 14 years, is one of my out-patients at King's College Hospital; she suffers severely from intermittent attacks of headache and general malaise, and is, besides, a typical case of postural albuminuria. The attacks last for a day or two, and during these periods large numbers of B. coli are found in the urine, but they are not present in the intervals. At these times the albumin is also in larger quantities and may even be present in the specimen passed on rising. Regulation of the bowels alone has not prevented the attacks. There seems to be a direct relationship between the passage of bacilli, the quantity of albumin and the symptoms. Neither pus, epithelial cells, nor casts have been found. Under treatment directed against the B. coli the headaches and associated symptoms are diminishing, the bacilli are less frequently found, and the quantity of albumin is becoming less.

The passage of B. coli may occur in persons who are suffering from other conditions and may aggravate the original disease. This was the case in two individuals suffering from pulmonary tuberculosis and in a third case of miliary tuberculosis. In the two former patients there was a rise of temperature with sickness and diarrhœa, which had not been present before and which subsided with the appearance of the abnormal urinary condition. In the third case no difference in the symptoms was produced.

In the next two cases the symptoms pointed mainly to the kidney as being the organ affected. The first is that of

lady, about 60 years of age, who had for three weeks attacks of pain referred to the region of the right kidney, associated with feelings of general malaise and on two occasions with slight rigors. There was some blood in the urine, at times sufficient to be recognised with the naked eye, and in addition a considerable number of motile organisms, which on examination were found to be of the B. coli variety. No rise of temperature was recorded. The right kidney was palpable and at first slightly tender. Treatment directed against the urinary condition has been successful in relieving her and in getting rid of the organisms from the urine, and there has been no return of the symptoms during the past eight months. The second case was that of a nurse who three months previous to being seen had some frequency of micturition, which yielded at the time to treatment by large doses of potassium citrate. On the first day on which she was seen the temperature was 103° F., the tongue was dry and brown, and some delirium was present at night. From the third to the sixth day she had pain in the right loin, with considerable swelling and tenderness of the right kidney. During these first six days the urine contained at times many different organisms, with pus, blood, and epithelial cells, while at other times there were fewer cells and B. coli in pure culture. The patient was examined under an anæsthetic by Sir W. Watson Cheyne, who detected a cervical polypus. This was removed on the seventh day of her illness by Dr. Eardley Holland. The urine continued to contain the bacilli, but the pus cells gradually disappeared. The presence of this septic polypus explained the varying condition of the urine, which at times was contaminated by the vaginal discharge. The temperature came down to normal on the tenth day, but the kidney remained enlarged and tender for a further period of 14 days. Rapid improvement followed treatment by vaccines, and at the end of two months she was in better health and weighed more than she had for several years previously. A few bacilli were still present in the urine, and it was not until the expiration of three months that they finally and permanently disappeared. During this period treatment was also largely directed against the constipation, which had been rather marked. Both these patients complained of pain in the region of the kidney, and in both that organ was enlarged and tender. In the second case the attention was at first directed to the bladder, but the pain in this area was probably due to the polypus and disappeared on its removal.

The following is a case of quite a different character, but it illustrates the advantage of examining the urine for B. coli and of utilising the same when found. A young married woman, the subject of chronic constipation, was in the seventh month of pregnancy. For two months she had been suffering from a recurrent discharge of pus, mucus, and blood from the rectum, accompanied by severe pain and tenesmus. The motions were, however, passed without pain and formed. There was an evening temperature reaching 101° F. with occasional rigors, and she was steadily losing ground. The pus from the rectum contained many and various organisms. The urine drawn off by catheter contained B. coli, but no pus cells. Her medical attendant diagnosed ulceration of the lower part of the large intestine and was able to detect some of the ulcers by rectal examination, though there was no induration round them. A surgeon was called in, and, diagnosing a pyosalpinx opening into the rectum, performed laparotomy. The pelvic organs were found to be normal except that the sigmoid flexure was markedly congested. During the night following the operation the patient was delivered of a seven months child, which only survived for a few days. During the next four days the temperature remained between 102·5° and 103·5°, the patient being in the "typhoid state." An injection of 30,000,000 of the dead organisms prepared from the culture derived from the urine was given. This was followed by marked improvement in the general condition of the patient and by a fall in the temperature to between 100° and 101°. The injection was twice repeated at intervals of a week, each time with great improvement. Rectal irrigation produced a most beneficial effect and was responsible for the ultimate cure of the patient, although a temporary relapse occurred after an interval of three months.

Another case in which the urine was employed for the purpose of isolating the organisms is the following. A young man, aged 20 years, developed an attack of appendicitis. It was considered desirable to operate immediately, and an abscess was opened and drained. As the patient's condition did not clear up satisfactorily a second operation was undertaken for the removal of the appendix. A week later the wound was looking perfectly healthy and there was practically no discharge, but the temperature varied from 101° to 103° F. He was pale, anæmic, restless, and had wasted considerably. A culture taken from the wound was found to be sterile, probably owing to the antiseptics employed in the dressings. The urine, however, contained B. coli, and a pure culture was obtained from which a vaccine was prepared. The first injection produced much general improvement, with a fall in the temperature to 98·8°, which, however, was not maintained, but was succeeded on the fifth day by a rise to 102°. A second injection was given seven days after the first and with a similar improvement, and following the third inoculation after a similar interval the temperature became and remained normal.

The three following cases illustrate a condition of caseation of varying extent due to this organism.

A patient, aged 35 years, had been complaining for two years of lassitude and weakness. During this time she had been chronically constipated and had been troubled with piles and occasional rectal discharge. For one year there had been pains in the pelvic region and right flank which increased in severity during the menstrual periods. She lost weight considerably and began to have an evening rise of temperature. The pain eventually became so severe as to prevent her getting about at all. Examination showed that the pelvic organs were matted together, and the condition was diagnosed as due to tuberculous peritonitis confined to the pelvic region. It is not recorded whether B. coli were present or not in the urine. Laparotomy was performed, and the uterus was found to be bound up with the posterior wall of the bladder and a coil of small intestine in a mass of caseous material. The mass was removed as freely as possible. I was asked to estimate the opsonic index to tubercle and to treat the patient for this condition. The tuberculo-opsonic index, however, proved to be normal on four different occasions. Examination of the urine demonstrated the presence of numerous B. coli, sometimes with and at other times without pus. A careful examination of the microscopical sections of the material removed showed that there was no structure suggesting tubercle. Extensive caseation was present, but everywhere throughout this formation were numerous short bacilli, which did not stain by Gram's method and were not acid-fast. Under general treatment and by vaccines of B. coli derived from cultures from the urine she is now well and at work. During the first 12 months after the operation there were periodic attacks of pain followed by the passage of stitches in the urine with small masses of inspissated pus. These attacks have ceased during the past year and the urine is now free from B. coli. A sinus following the operation communicated with the bladder and allowed the passage of urine for the first three months, and remained in an indolent condition for a year, but is now soundly healed. In this case there was a period of nine months during which bacilli were intermittently passed.

The following case also shows this tendency of the B. coli to form indolent caseous masses. A young girl, who had two years' previously been in King's College Hospital under the care of Dr. Nestor Tirard for tuberculous peritonitis which had completely resolved, was readmitted with some obscure pelvic trouble. There was an ill-defined swelling to the left of the middle line reaching to within 2 inches of the umbilicus. Per vaginam the uterus was normal in size but was fixed. The tumour was attached to the left side and fundus of the uterus. A fixed mass was also felt in Douglas's pouch on the right side. Treatment was directed against constipation and she was sent to a convalescent home for three weeks. On her return she was operated on by Dr. John Phillips. A large mass was found attached to the small intestine, great omentum, and left ovary and tube. This was removed and proved to be an inflamed broad ligament cyst. A similar but smaller cyst was found on the right side and was also removed. Dr. W. d'Este Emery reported that they were of a chronic inflammatory nature and almost certainly tuberculous. Nine days later the stitches were removed, the wound being quite healthy. She was transferred to my care at the Hospital of St. John and St. Elizabeth six weeks after the operation. There was still a temperature

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ranging between 100° F. in the evening and normal in the morning. The laparotomy wound was soundly healed but rather painful. Shortly afterwards a swelling formed in this area accompanied by considerable pain and increasing induration. In the course of a week the skin over this swelling became gangrenous and sloughed. On removal of this superficial slough a mass of caseous material was seen which gradually separated out, leaving an ulcer about 1½ inches deep. Microscopically it consisted of granular structureless material containing numerous Gram-negative bacilli. A pure culture of B. coli was obtained from it. The urine was acid and contained numerous B. coli. Under treatment the ulcer healed in the course of six weeks with the exception of a small sinus which even now, nine months after operation, discharges a small quantity of blood-stained fluid at the times of the monthly periods. With this exception she has done remarkably well, and six months after the operation was able to walk several miles a day. This case, like the preceding, shows the chronic and indolent nature of these sinuses left by a B. coli infection. In both cases the organism was easily obtained from the urine and a vaccine thus obtained was used in the treatment. The sinuses in both cases were sterile, as shown by inoculation of a culture tube.

In the third case the infection gave rise to a condition which was mistaken for a malignant pelvic tumour. A woman, aged 50 years, was admitted into the Italian Hospital, under the care of Mr. T. P. Legg, complaining of inability to pass urine. Examination showed a tumour which extended from the pubes to the umbilicus. Per vaginam this was felt to be of an elastic consistence. A diagnosis of an ovarian cyst or a fibroid of the uterus pressing on the bladder was made. There was no rise of temperature. A large quantity of urine was drawn off by catheter; it contained neither albumin nor sugar, but unfortunately it was not examined for the presence of organisms. The tumour still persisted after catheterisation. Laparotomy was performed and the uterus and ovaries were found to be normal, but displaced downwards and backwards by the tumour, which was of a dark-red colour and covered by peritoneum, with many large vessels coursing over the surface. It was then seen to be connected to the upper wall of the bladder, and in view of the size (3 × 3 inches approximately) and of the hardness of the structure it was thought to be a new growth arising from the bladder; no attempt was made to remove it. Three days later the temperature rose in the evening to 103° F. and became hectic (normal to 103°) for several days. She then passed a considerable quantity of pus, accompanied by large flakes of lymph, in the urine. The tumour was found to have disappeared, but from time to time it re-formed and emptied itself, eventually disappearing entirely. From the urine a pure culture of B. coli was obtained. A year afterwards the patient was perfectly well, and nothing was to be felt either per hypogastrium or per vaginam. Turbid urine is still passed occasionally, the turbidity being due to B. coli, and no pus cells are to be found on these occasions. Vaccination was adopted in the first instance, but has not been persevered with.

These three cases have all occurred in women, but the infection is not confined to them. A man, aged 30 years, was sent to me by Mr. F. Burghard with a history of recurrent attacks of fever and general malaise associated with pain in the region of the left kidney. At these times he has much pus in the urine, but in the intervals there are only B. coli and no pus cells. He is also improving, and the attacks are becoming less severe in intensity, but not in frequency under treatment by vaccines obtained from the organisms which he is passing.

The following case is not so clear, though suggestive. A child, aged 9 months, was admitted under my care at the Evelina Hospital from Dr. H. C. C. Mann's out-patient department. She had been quite well up to three months before admission, when she developed an attack of bronchitis, with occasional discharge from the right ear. This discharge had been last noticed three days before admission, on which date there had been some sort of a fit, but a reliable account of it could not be obtained. In the interval several more fits occurred, and slight right-sided internal squint was present. The parents had lost three children from convulsions. The child had been correctly fed and there was nothing to suggest congenital syphilis. Nutrition was good. There was slight head retraction with marked irritability and general cutaneous hyperæsthesia. Kernig's sign was present and a questionable left internal squint. The knee-jerk was obtained on the left side, but not on the right. There was also a perforation of the right membrana tympani. Lumbar puncture produced 16 cubic centimetres of clear fluid, containing no cells, and from which no growth was obtained from inoculation on to suitable media. The cerebral symptoms were relieved by this lumbar puncture. The urine contained large quantities of B. coli and a few pus cells, and was very acid in reaction. Calmette's tuberculo-ophthalmic reaction was negative. The temperature ranged between 99° and 103° F., and the pulse from 140 to 150. No alteration in the condition occurred, and the child died on the eleventh day after admission. Post mortem nothing abnormal was found, and cultures from the spleen, heart blood, and kidney remained sterile. The course of the case suggested an acute toxæmia, and the only pathological condition detected was the presence of bacilli in the urine.

In treating one of these cases it is necessary to discriminate between the severe and milder types of case. Because the bacilli are found in the urine it is not necessary at once to rush to vaccines, and even in the more chronic forms where vaccination will be the best remedy it is inexpedient to neglect all other measures and rely on this alone. Many such cases must have occurred in the past when the condition was less well recognised and must have recovered, and no doubt many cases of unexplained febricula may have been instances of this condition. Therefore each case ought to be treated according to the severity and duration of the disease. The milder forms will yield to the well recognised treatment of an ordinary febrile attack, a hot bath, a mercurial purge, rest in bed, and reduced diet. Should the condition not clear up at the end of a week or ten days, then the sooner more radical measures are adopted the more likely is the condition to resolve. It should be remembered that the B. coli is an inhabitant of the intestine and in cases of constipation flourishes to a marked degree. Therefore it is important to promote a fairly free evacuation of the bowels daily. Without such an evacuation all other treatment will be unsatisfactory. In the second place it is well to give some intestinal antiseptic to hinder the growth of the organism, such as creasote or small doses of calomel (1/20th of a grain) after each meal. This latter drug in such doses has in my hands proved fairly satisfactory, but some prefer to try to replace the B. coli with a lactic acid bacillus by means of artificially soured milk. Seeing that many of the preparations of lactic acid organisms contain no living bacilli this is less certain than it appears. The B. coli flourishes in an acid medium; it is therefore advisable to alter the reaction of the urine, which should be rendered alkaline by the administration of the drugs usually employed to this end, to which urotropine in 5 or 10 grain doses may be added. This relieves the patient of many unpleasant symptoms and hinders the proliferation of the organism. The urine should be tested from time to time to see that enough alkali is being given, and it is sometimes advisable to give rather more than the usual dose the last thing at night. This will often be successful in procuring a good night's rest without the employment of anodynes.

Should this treatment not be successful in diminishing the numbers of the micro-organisms in the urine and relieving symptoms it is advisable that inoculation should at once be resorted to. It is undoubtedly best to employ a vaccine prepared from the organism which is attacking the patient, and a vaccine can easily be prepared in the course of three days. Inoculations should be given every seven or eight days. The initial dose for an adult of 50,000,000 of dead organisms (estimated according to the method advised by Sir Almroth Wright) will be comfortably tolerated. The second dose should be half as much again, and so on. It is also advisable to have a fresh vaccine prepared each month, better results being obtained than when the same vaccine is employed continuously. This may be explained on one or two grounds. Either the vaccine loses some of its potency or the organism is able to develop power to protect itself from the antibodies produced by the host as a result of the vaccination. It will be remembered that this latter occurs in the case of trypanosomes against which atoxyl is administered. Whichever explanation is correct, the fact remains that greater improvement takes place when the vaccine is freshly prepared every month.

It must always be remembered that the condition, when

once well established, is very refractory, and it is well to start treatment early and to carry it out energetically. The general health must also be seen to and any abnormality should be rectified.

Harley-street, W.

A CRITICAL REVIEW OF SOME CASES OF PERFORATION OF STOMACH AND DUODENAL ULCER.

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IT has been my lot within a period of nine months (from March to December, 1908) to deal with 13 cases of perforation of the stomach and duodenum. Some of the cases, indeed all of the cases, were interesting and instructive from some point of view, and I hope that the publication of the abbreviated history in each case will be helpful. For the abstract of the history, and for the trouble taken in working up the details of this paper, I am indebted to my former house surgeon, Dr. F. C. Macaulay.

The gastric cases are taken first, and though counted as 10 in number might be regarded as 12 perforations, for the first case was operated upon for perforation on three separate occasions. Though no perforation was discovered at the first operation, in view of the subsequent history (see Case 1) I think it more than probable that some leakage had occurred. The site of the ulcer on the second and on the third occasion was different. They were both situated, however, close to the pylorus, the second occasion on the anterior wall, and the third on the posterior wall. At the third operation no trace could be found of the previous ulcer on the anterior wall.

That it is possible to have an ulcer so eroding the coats of the stomach or bowel as to give rise to symptoms and signs suggestive of perforation, and yet on examination reveal no macroscopic evidence of leakage, I have no doubt whatever. In Case 9 the sudden and severe onset, accompanied by pronounced rigidity and tenderness of the epigastrium and followed by such profound collapse, certainly suggested leakage, and yet, though the ulcer was discovered and the serous coat was carefully examined, no actual hole was seen. I remember on another occasion examining with Dr. A. Johnston, then of Ruchill Fever Hospital, a case of suspected perforation in a man suffering from enteric fever. Neither of us had any doubt that a perforation had occurred, and though in several of the ulcers the dividing line seemed to be no thicker than tissue paper no visible point of leakage was discovered. In both of these cases there was some free fluid in the abdominal cavity, and the serous lining of the bowel was slightly injected. Is it possible that by osmosis an infection of the peritoneal cavity could be brought about, the serous coat over the site of the ulcer becoming, if not dead, so non-resistant as to act like a piece of soaked parchment? It is not infrequent to find in the previous history the record of an attack of pain severe enough to suggest leakage, and one has, unfortunately, known patients lulled into a sense of security by the belief that their present seizure of pain, though more severe, would pass off like the last and refuse operation until it was too late.

Ten of the cases were gastric and three duodenal.

Age and sex.—The ages ranged from 16 to 72 years. The average age over all was 37·7 years. The average age of the gastric cases was 36·8 years, of the duodenal cases 41 years. Of the 10 gastric cases only 3 were in females whose average age was 19 years. The 3 duodenal cases were in men.

Onset.—In 12 out of the 13 cases the onset might be said to be instantaneous; in one (Case 12) the onset was more or less sub-acute. In the majority no food had been taken for some time previously, and the time of perforation was oftenest in the late hours of the evening or in the early morning. Case 4 created a considerable amount of interest, owing to the fact that he was seized while dressing for his marriage. He collapsed, but rallied somewhat and went through the service, only, however, to be snatched from the arms of his bride and handed over to the care of the surgeon. In the by-going it might be mentioned that the young bride accepted the position with that stolid indifference and apparent want of feeling which is said to be so characteristically Scottish.

Previous history.—In eight (Cases 1, 3, 5, 7, 8, 9, 10, and 13) there was definite history of pain after food and other gastric symptoms; in the remaining five (Cases 2, 4, 6, 11, and 12) no history of previous gastric trouble was obtained. The occurrence of gastric symptoms previous to the onset is of considerable diagnostic value. Some of those who stated that they had had no previous stomach trouble admitted afterwards to having at times had feelings of discomfort which they had attributed to flatulence. But the point to note particularly is that a patient's statement as to the previous absence of stomach symptoms does not preclude the possibility of ulcer, nor does it preclude the possibility of the acute symptoms being those due to perforation (Case 12).

Pain.—It is almost considered a surgical axiom that in all cases of severe abdominal crises the pain is first of all referred to the epigastrium—solar plexus, and after some time to the particular seat of origin, to the appendix, to the gall-bladder, to the stomach. In every case of this series pain was a prominent feature, but was quite impossible to define except that it was severe, "doubled him up," "made him cry out," &c., and was equally difficult to locate apart from surface tenderness. The patients were so ill that speaking was an additional agony and as little as possible was said and indeed asked. In six cases, however, the pain was definitely referred to the epigastrium, in other three the pain began around the umbilicus, remaining there in one (Case 13, duodenal) and in the other two becoming epigastric later. In two the pain was felt in the shoulders as well as in the abdomen—both gastric—so that in 9 out of 13 cases the pain was referred to the upper part of the abdomen.

Vomiting subsequent to the onset was stated to have occurred in seven cases (Cases 1, 3, 4, 5, 6, 12, and 13). In three it was stated that no vomiting had occurred (Cases 2, 7, and 10). In three vomiting was a prominent symptom before the onset of the acute attack (Cases 1, 3, and 8). The vomit subsequent to the onset was "stomach contents"; in one case it was "coffee grounds."

Collapse was a prominent feature in most of the cases, depending upon the length of time since the onset. It was definitely stated to be present in every case to begin with, but passed off gradually in some cases quicker than in others—e.g., in Case 2 and in Case 8.

Appearance in most cases was indicative of severe pain; the patient looked very ill; the face was pale with malar flush.

Flatus per rectum.—The length of time subsequent to perforation was so short comparatively that the non-passage of flatus was less important as indicating peristaltic paresis. In two cases flatus was definitely stated not to have passed since onset.

Respiration.—The earlier the case was seen the more likely was the breathing found to be thoracic in type and the more averse the patient was to take a deep inspiration. In five cases the respirations were stated to be wholly thoracic; in three the abdomen was said to have moved slightly; in the others no reference was made to the character of the respirations.

The *temperature* varied from 97° to 100·8° F. The temperature depended upon the length of time that had elapsed since the perforation.

The *pulse* varied from 70 to 138 per minute, also evidently dependent upon the length of time since the onset. A gradually increasing pulse-rate is significant.

Abdomen.—Distension was definitely present in four cases (Cases 6, 8, 10, and 13); the longer the time the greater the distension.

Rigidity of the abdominal wall.—This is a sign of much importance. With one exception (Case 10) it was present in every case. In 11 of the cases the rigidity was general, in two it was epigastric, but in every case it was more evident over the stomach. In one case (Case 12) the main rigidity was found on the right side; in another the contraction of the recti was visible (Case 7). The earlier the case the greater was the rigidity. In the only case where it was stated to be absent nearly 60 hours had elapsed from the time of onset and the general peritoneal cavity was found to be shut off.

Tenderness, abdominal, on palpation was present in every case with one exception (Case 2) and in that case there had

been tenderness which had passed off, and as this case was seen within a few hours from perforation the tenderness from peritonitis had not had time to manifest itself; the ulcer, moreover, was on the posterior wall. In six cases there was epigastric tenderness only; in the remaining seven it was general, with perhaps a greater degree of tenderness in the epigastrium.

Liver dulness.—In ten cases there was some alteration in the liver dulness; in three cases the liver dulness was completely gone (Cases 3, 11, and 1), in seven cases it was encroached upon (Cases 2, 4, 5, 6, 7, 8, and 13) and in three cases the liver dulness was normal (Cases 9, 10, and 12). No actual perforation was found in Case 9; in Cases 10 and 12 the general cavity was not at first affected. In this connexion it is interesting to note that the liver dulness will be found encroached upon after every abdominal section, more especially if it involve the upper area of the abdomen. As the air gets absorbed the normal limits of dulness return. The length of time varies from a few days to a fortnight.

Signs of *free fluid in the abdominal cavity* were obtained in six cases; in the others these signs were absent or uncertain.

The *length of time between the onset and operation* varied from 4½ to 80 hours. Seven cases (Nos. 1, 2, 4, 5, 7, 8, and 9) were operated upon under 12 hours; of these 2 died—Cases 7 and 8 (Case 8 was complicated by cirrhosis).

Operation.—In every case to begin with a small vertical incision about one inch in length was made in the suprapubic region. This enables the surgeon at once to ascertain whether there be free fluid in the abdominal cavity and its nature, and the condition of the serous coat of the bowel—whether it be injected or not; it can also be used for subsequent drainage. The amount of free fluid in the abdominal cavity varied; at times it simply welled out, at others the quantity was so small as to be practically non-existent. The fluid in appearance suggested dish-water, turbid, with flakes of lymph if the perforation had existed for over six to eight hours and usually odourless. In no case were there solid particles of partly digested food; in one case the fluid had a distinctly alcoholic odour, the patient having taken a glass of brandy subsequent to the perforation. Gas was present, free in the abdominal cavity, in the majority of the cases, accounting for the absence of liver dulness.

Seat of perforation.—The stomach was exposed by a vertical incision made slightly to the left of the middle line. In eight instances the perforation involved the anterior wall of the stomach; in six of these it was towards the lesser curvature and close to the pylorus. In two the posterior wall was the seat: in one of these about its centre, and in the other at the pylorus. In the three duodenal cases the ulcer was situated in the anterior wall of the first part, so that it might be said that in 11 out of 13 cases the ulcer was situated in the immediate neighbourhood of the pylorus.

The size of the perforation varied from that of a pin's head to that of an opening as large as a threepenny-piece. As already stated, no visible perforation was discovered in Case 1—first operation—or in Case 9.

Closure of the perforation.—In no case was any attempt made to excise the ulcer or to do more than simple closure. This was effected either by a double row of catgut or an outer row of silk and an inner of catgut. In three cases the amount of induration round the ulcer was so extensive and the tissue so friable that the inturning was a matter of some difficulty. A strand of iodoform gauze was led in two of these cases from the abdominal wound to the seat of the perforation as an additional security. I do not, however, consider this a wise procedure, as protective adhesions so soon form and a *via media* is left for infection.

Flushing the abdominal cavity was in every case carried out with warm saline with drainage from one or both flanks as well as by the suprapubic opening. The abdominal wound was closed by through-and-through silkworm gut stitches.

After-treatment.—In every case the upper end of the bed was placed upon high blocks—Fowler's position—as soon as the shock had passed off. Saline solution was given four-hourly per rectum, and strychnine, either with or without digitalin, was given hypodermically if the pulse demanded it. Nothing was given by the mouth before the end of the third day, the patient being nourished by nutrients administered per rectum, consisting of peptonised milk (4 ounces), saline solution (2 ounces), with brandy if necessary. A wash-out enema was given every day. Turpentine enemata combined with the frequent passage of the flatus tube were of great value in flatulent distension. The glass drainage tube draining the pouch of Douglas was removed on the second day, never later than that; the omentum is apt to find its way into the tube, and if left longer the continuous pressure on the already devitalised bowel has been known to lead to ulceration and the establishment of a fæcal fistula. Oral feeding consisted at first of water in small quantities soon followed by dilute peptonised milk. At the end of seven days farinaceous foods were given; then in another week light diets, fish and chicken, cream, &c.

Complications.—Wounds all healed primarily save in Case 5, where some suppuration formed round a stitch hole. Parotitis followed in two cases (Cases 5 and 9). Case 5 went on to suppuration; Case 9 subsided under lead and opium lotion. Hæmorrhage persisted from the wounds and from the stomach in Case 8 for some days—attributed to the cirrhotic condition of the liver.

Mortality.—If the gastric cases be taken alone (10 cases) 6 recovered, 60 per cent.; and 4 died, 40 per cent. The three cases of duodenal ulcer died, in each case within 24 hours from operation. In Case 12 the ulcer was only discovered post mortem, it was not found at the operation.

PERFORATION OF GASTRIC ULCER.

CASE 1.—This case is unique, having been operated upon on three separate occasions for perforation of the stomach. The last perforation occurred in August, 1908; the history of the other occasions is included.

A female, aged 16 years, was admitted to the Victoria Infirmary, Glasgow, at 9 A.M. on Jan. 1st, 1905, under the care of Mr. A. E. Maylard, to whom I am indebted for permission to publish this case. At 1 A.M. that morning she developed sudden sharp pain in the epigastrium and vomited coffee-ground material. She had, for a fortnight, been troubled by pain and vomiting after food. On admission she was anæmic but not collapsed. The breathing was thoracic in type. The abdomen was very tender in the epigastrium and rigid all over. The percussion note was normal. The temperature was 100·8° F. and the pulse was 128.

Operation was performed by Mr. Grant Andrew. Shortly after admission exploratory laparotomy was decided on, although it was recognised that the symptoms and signs were not typical of perforation. The abdomen was opened by a transverse incision in the epigastrium. The stomach was examined and no perforation was detected, although there was a little grumous fluid in the abdomen. The appendix, &c., were healthy. The abdomen was then closed and the patient made an uninterrupted recovery.

The patient was again admitted on Feb. 18th, 1908, with a history of sudden and severe abdominal pain and collapse. The temperature was 100° and the pulse was 110. The liver dulness was absent and the upper half of the abdominal wall was rigid.

Operation by Mr. F. Macrae. Perforation was found on the anterior wall near the pylorus. This was closed and the abdomen was irrigated and drained through a suprapubic wound and in both flanks. Complete recovery followed.

The patient was admitted for the third time on August 3rd, 1908. Four hours previously she was seized with sudden acute pain over the stomach. She vomited and was much collapsed. She had recently been troubled by vomiting after food. On admission she was very pale and collapsed with a temperature of 97·8° and pulse of 104. She lay on her back with her legs drawn up and was evidently in great pain, this being worst over the stomach. The abdomen was not distended but was tender and rigid all over, especially in the epigastrium.

Operation by Mr. Grant Andrew. A suprapubic incision revealed typical stomach fluid. An incision was next made over the epigastrium, excising the old scar. A small perforation was found on the posterior wall, lesser curvature, and near the pylorus. It was sutured by catgut and silk in two rows. The abdomen was then irrigated with saline solution, drainage being established through the right flank and the suprapubic incision. The patient steadily improved and was sent to a medical ward for further treatment.

CASE 2.—A female, aged 25 years, was admitted to the Victoria Infirmary at 11 P.M. on March 8th, 1908. At 8.30 P.M. the same evening she felt acute abdominal pain. She did not vomit. Dr. J. Hamilton, who was called, diagnosed the condition as perforated gastric ulcer and sent her into the infirmary at once. At 9 P.M. her pulse had been 66 per minute and her temperature 97° F. On admission she did not seem very ill and lay very comfortably in bed. There was no abdominal pain nor tenderness. Rigidity, however, was general. The percussion note was clear all over. One inch of liver dulness was abolished inferiorly. The pulse was 84 and the temperature was 99·4°.

Operation was performed by Mr. Grant Andrew at 1 A.M. on the 9th, four and a half hours after perforation. A suprapubic incision showed turbid fluid. On opening in the epigastrium and drawing out the stomach the anterior wall was found normal. On the posterior surface a pin-head perforation was found about the centre of the wall. This was closed by two layers of sutures, catgut and silk, the Lembert stitch being used. The abdominal cavity was then irrigated with warm saline solution. Drainage was provided for by a glass tube in the suprapubic wound. This was removed the same day. The patient was put on nutrient enemata of peptonised milk and saline solution and was given hypodermic injections of strychnine four hourly. Fowler's position was adopted. Oral feeding was begun on March 13th and convalescence progressed satisfactorily, the patient being dismissed well on April 15th.

CASE 3.—A male, aged 28 years, was admitted at 10 A.M. on May 20th, 1908. Exactly 12 hours before he was seized with sudden severe pain in the abdomen. Vomiting occurred shortly after and had been continuous since. For the last two or three weeks he had felt pain after food and vomited typical coffee-ground material. On admission he did not look very ill. His temperature was 100° F. and his pulse was 88 per minute. The whole abdomen was tender and very rigid and the liver dulness was gone.

Operation was performed by Mr. Grant Andrew at 11 A.M., 13 hours

after perforation. A suprapubic incision was followed by the escape of milky fluid. The bowel was congested and on searching for the appendix it was found normal. Incision was then made over the stomach; fluid and gas escaped. A perforation, an eighth of an inch across, was found on the anterior wall close to the pylorus. This was closed with catgut and silk. A drainage-tube was then inserted in the right flank and the abdominal contents were washed with warm saline solution. The abdomen was closed with through-and-through salmon-gut sutures, a glass drain being left in the suprapubic wound. After-treatment: Fowler's position was adopted. The patient was given saline solution per rectum and strychnine every four hours. Nutrient enemata were administered. The glass tube was removed on the 21st; the pulse then was 92 per minute and the temperature was 99°. The bowels were moved on the 22nd. Thence the patient made steady progress till he left on June 24th.

CASE 4.—A man, aged 26 years, was admitted on Sept. 23rd, 1908, at 1.50 A.M. At 7 P.M. on the 22nd, while dressing for his marriage, he was seized with sudden pain in the abdomen which was sufficiently severe to make him cry out. The pain was referred to 1 inch above the umbilicus in the middle line. He vomited stomach contents and became quite collapsed. The pain then subsided a little and he went through with the marriage ceremony. Thereafter the pain became worse and was general all over the abdomen, vomiting occurring several times. His bowels, which had always been regular, were moved on the day of onset of illness. No previous stomach history was obtained. Dr. W. K. Peden was called to see him, recognised the condition as one of perforation, and sent him at once to the infirmary. On admission the patient was in great pain and was very restless, tossing about but keeping his legs drawn up. The face was pallid with malar flush; the tongue was furred but moist. The abdomen moved slightly with respiration and was not distended. Both recti stood out visibly and on palpation general rigidity was pronounced. There was also general tenderness, very acute 1 inch above and slightly to the right of the umbilicus. Percussion was clear in front but dull in both flanks. The liver dulness (nipple line) was 3 inches. The pulse was 104 and the temperature was 99·2° F.

Operation was performed by Mr. Grant Andrew 6½ hours after the onset. A suprapubic incision was followed by escape of yellow watery fluid with lymph flakes. On opening in the epigastrium fluid and stomach contents escaped. A pinhole perforation was found on the anterior wall, lesser curvature, quite close to the pylorus. This was closed by a double Lembert suture of catgut and silk. The abdomen was then irrigated as usual with drainage through the right flank in addition to the wounds in front, and the abdomen was closed with through and through salmon gut. After-treatment: Fowler's position was adopted. Saline solution per rectum and nutrient enemata were given. On the 24th both tubes were removed and water was given by the mouth. On the 25th both pulse and temperature rose, but were normal the next day on the discontinuance of the fluid by the mouth. The bowels were moved on the 27th. Nutrients were stopped entirely on Oct. 5th, and the patient left well on the 28th. Since then he has been back looking well.

CASE 5.—A male, aged 51 years, was admitted at 11.45 P.M. on Sept. 23rd, 1908. At 4 P.M. that day he felt sudden acute pain in the epigastrium and became prostrated. Vomiting occurred several times, and as his symptoms did not lessen in severity a medical man was called in who ordered his removal to hospital. There was a definite history of gastric ulcer for three years with aggravated symptoms for two months. On admission the patient looked very ill and was evidently suffering greatly. The tongue was dry and furred. The abdomen was very rigid and generally tender, both signs being most notable above and to the left of the umbilicus. The liver dulness was 2 inches in the nipple line. Signs of free fluid were obtained. The pulse was 90 and the temperature was 99·6° F.

Operation was performed 9½ hours after perforation. The usual incisions showed typical fluid in the abdomen. The perforation was in the anterior wall, lesser curvature, and near the cardiac end; there was marked induration all round it. It was repaired by continuous catgut and silk stitches. Saline irrigation and drainage were carried out as usual. After-treatment: Fowler's position was adopted. Saline solution and nutrients were given per rectum every four hours. The drainage-tubes were removed on the 26th and the patient did very well until Oct. 4th, when parotitis of the right side developed with rise of the pulse and temperature. He left well on Dec. 12th, and since discharge has been back looking in good health.

CASE 6.—A female, aged 19 years, was admitted on Oct. 31st, 1908. 12 hours before admission she was seized with sudden agonising abdominal pain, at first round the umbilicus, in the back, and both shoulders, and later over the stomach. She vomited stomach contents and was completely collapsed. Improvement shortly took place and she felt more comfortable till six hours later, when the pain became aggravated, being felt generally all over the abdomen. She again vomited several times, the vomit being gastric contents. On admission the face was pallid; the tongue was clean and moist. The temperature was 99·4° F. and the pulse was 138 and full in volume. The respirations were wholly thoracic. There was great distension of the abdomen. Percussion revealed the presence of fluid free in the general abdominal cavity. The liver dulness in the nipple line was two inches. Rigidity, while general, was extreme over the stomach, the same applying to tenderness, which was agonising at a spot midway between the xiphoid and the umbilicus. There was a history of gastric ulcer, which had, however, ceased to trouble her two and a half years before.

Operation was performed by Mr. Grant Andrew 13 hours after the onset. The abdomen was opened above the pubes by a small incision and was found full of fluid, which gushed out; it contained large lymph flakes and mucoid matter. The epigastric incision was followed by a rush of gas and fluid. A small, cleanly punched-out perforation was found in the anterior wall, near the cardiac end; this was closed by a double Lembert's suture of catgut and silk. Then followed flushing with warm saline solution and drainage in the flank and in front. After-treatment: Fowler's position was adopted when shock had passed off. Saline solution per rectum (one pint) and half an ounce of brandy were given every four hours. Strychnine and digitalin were given every four hours and the patient received nutrients. On Nov. 1st she was very restless. The pulse was 160 and the temperature was 103·2°. Flatus was passed. On the 2nd the glass tube was removed from the suprapubic wound. The pulse was 168 and the temperature was 103·2°. The patient was very restless and heady, although quite free from pain, saying she felt very well. She died at 7.30 A.M. on Nov. 3rd. This case was sent in by Dr. William Lawson with the diagnosis of peritonitis, due probably to perforated gastric ulcer.

CASE 7.—A male, aged 46 years, was admitted on Nov. 18th, 1908, at 11 A.M. While at work two hours before he was seized with agonising pain situated at first round the umbilicus, and later in the epigastrium and over the stomach; he became quite collapsed. Vomiting did not occur then or subsequently. After sitting outside for two hours he was brought along to the hospital. There was a history of pain and coffee-ground vomiting for a long time back. On admission the patient looked very ill, with pallid face and cold clammy skin. The pulse was 70 per minute and very weak; the temperature was 97·6° F. The abdomen was not distended, and it moved with respiration. Both recti were visibly contracted. Rigidity was present all over, being extreme in the epigastrium. There was slight epigastric tenderness, but no general tenderness. Percussion was clear in front and dull in the flank—*vice-versâ* when the patient lay on his side, the note in the upper flank being resonant then. The liver dulness was encroached upon as regards its lower border by two inches. It was also noticed that the man lay with his legs drawn up.

Operation was performed by Mr. Grant Andrew six hours after perforation. The usual suprapubic incision revealed yellowish watery fluid with large lymph flakes in it. On incising the epigastrium a large perforation was found on the anterior wall, lesser curvature, near the pylorus. Induration extended for fully half an inch all round its circumference. It was closed as usual, a much larger portion of the stomach wall requiring to be invaginated to obviate the indurated base. The abdomen was then irrigated with a rubber drain in the flank. The operation was completed as usual save for the introduction of a strand of iodoform gauze, which was packed down to the site of the perforation in case there might be further leakage. Drainage was provided for by two tubes, glass and rubber. The fluid found in the abdomen had a distinctly alcoholic odour, the patient having taken a glass of brandy after the pain began. After-treatment: Fowler's position was adopted. The patient was given nutrient enemata of peptonised milk (4 ounces), saline solution (2 ounces), and brandy (½ ounce). On the 19th his pulse was 100 and the evening temperature was 101·6°. Flatus was passed by the rectal tube. On the 20th the glass tube was removed. The patient was much the same. On the 22nd the bowels were moved in bed, so nutrients were stopped. The gauze was removed from the epigastric incision. On the 23rd the pulse was 84. Milk and water were given by the mouth; there was no pain, tenderness, or distension. On the 30th the pulse was 116; the patient looked very ill. The abdomen showed no sign of peritonitis or of localised collection. The temperature was 99°. On Dec. 1st he gradually sank and died at 3 P.M. No necropsy was allowed.

CASE 8.—A male, aged 43 years, was admitted on Dec. 26th, 1908, at 3 A.M. The night before, at 11 P.M., he complained of sudden excruciating pain in the abdomen and became collapsed. Dr. D. Lamb, who was called in, sent him into the infirmary at once. Four years before he had acute pain and coffee-ground vomiting after food. These symptoms had abated, but returned a month before admission. There was also a history of immoderate indulgence in alcohol. On admission the patient was very drowsy and insisted upon going to sleep. He had no pain and lay comfortably on his right side with his legs drawn up. The breathing was thoracic. The abdomen was moderately distended and, while very rigid all over, was specially so in the epigastrium. Tenderness was acute over the stomach, more so to the right of the middle line. The usual signs of free fluid were present, and the liver dulness was encroached upon, measuring two and a half inches in the nipple line. The pulse was 96 and the temperature was 97·6° F.

Operation was performed by Mr. Grant Andrew at 4 A.M., five hours after perforation. On opening the abdomen above the pubes the turbid fluid typical of perforated gastric ulcer was found. The usual epigastric incision was made, and on drawing out the stomach a tiny perforation was found almost on the pylorus, anterior wall. The liver was found to be extremely hobnailed. The perforation was closed as usual, and after making a drainage wound in the right flank the abdomen was irrigated with warm saline solution. Drainage was provided for by glass- and rubber-tubes in the hypogastrium and flank respectively. Iodoform gauze was also packed down to the site of the ulcer. After-treatment: Fowler's position was adopted. The patient was given saline solution per rectum alternately with nutrient enemata four-hourly. On the 26th the pulse from 96 ran up to 130 in the evening. The patient was very restless, vomiting large quantities of coffee ground material. The abdomen was distended and tender, with blood oozing from each of the three wounds. This was considered due to the portal obstruction in the cirrhotic liver. Flatus was passed. Blood stopped oozing from the wounds on the 27th, and the patient was quieter. On the 28th large quantities of serum exuded from the wounds. The abdomen was less distended and less tender. On Jan. 1st, 1909, the patient was better in every way: the pulse was 90, and he was having milk and water by the mouth. On the 6th he was restless and heady; on the 8th he was delirious; the pulse was 130; the patient died.

CASE 9.—A female, aged 22 years, was admitted on Dec. 27th, 1908, at 2 A.M. The night before, at 11 P.M., extremely severe pain developed over the stomach. The pulse was feeble and almost imperceptible. There was great rigidity of the epigastrium and excessive tenderness there. She seemed so ill that perforation was suspected. Mr. Grant Andrew, who saw the case in consultation with Dr. Hugh Kelly, considered the case sufficiently urgent for exploratory laparotomy. The pulse was 90 and the temperature was 97° F.

Operation: The suprapubic incision was negative. The anterior wall of the stomach when examined through an epigastric incision was found normal. The posterior wall was then examined and an ulcer was found at the pylorus. The base of the ulcer was much thinned down, consisting practically of the serous coat. There did not seem to be any actual perforation. The abdomen was closed with through-and-through salmon gut. After-treatment: The patient was given nutrients of peptonised milk and saline solution for the first week, during which there was no oral feeding. During the second week dilute peptonised milk was given by the stomach. With the exception of a parotitis which subsided without suppuration convalescence was entirely satisfactory and the patient left well on Jan. 26th with symptoms of several months' duration quite gone.

CASE 10.—A male, aged 72 years, was seen in private with Dr. H. G. Leask at 9 P.M. on Jan. 20th, 1909. On Monday, the 18th, while at business, the patient was seized with sudden severe abdominal pain and had to go home in a cab, even although his house was quite near. There

was no vomiting. The pain gradually became less, but did not entirely go away. Hiccough also became troublesome. The bowels had not been moved for two days before the onset nor had they been moved up to the time of the consultation on the 20th. No flatus had been passed for two days. The abdomen was moderately distended and was not rigid. There was a little tenderness in the epigastrium, but none elsewhere. The liver dulness was normal and there was no dulness in the flanks. The case was regarded as one of malignant disease of the large bowel, probably at the splenic flexure. On the next day, Jan. 21st, it was reported that flatus had been passed during the night and that the patient was at any rate no worse.

Operation was performed by Mr. Grant Andrew at a nursing home. The abdomen was opened by a suprapubic incision and free fluid was found, but with no special characteristics. On pulling down the transverse colon stomach contents were observed evidently in part shut off from the general cavity. A perforation was found in the anterior wall of the stomach about two inches from the pylorus, with omentum adherent around it and almost closing it. The serous coat of the stomach was stained black all round the ulcer, the result of administration of bismuth for dyspepsia of many years' standing. The amount of induration in the immediate neighbourhood of the perforation rendered it difficult to close. Though the probability was that the ulcer was malignant there was no positive evidence of that fact. The opening was closed and drainage was established in the flank and pelvis. The patient had a good night after the operation, and his bowels were moved. He gradually sank, however, and died 28 hours after the operation. No examination was allowed.

PERFORATION OF DUODENAL ULCER.

CASE 11.—A male, aged 43 years, was admitted at 2.30 A.M. on March 7th, 1908, as a case of appendicitis. On Friday, the 6th, at 9 A.M. he felt very acute pain in the abdomen, which quite doubled him up. No further history was obtained. On admission the patient looked extremely ill, with short hurried respirations, 50 per minute, entirely thoracic. Rigidity and tenderness were both generalised over the abdomen, but were most marked on the right side. The percussion note was tympanic. The liver dulness had disappeared. The temperature was 99·2° F. and the pulse was 120.

Operation was performed by Mr. Grant Andrew 24½ hours after perforation. A suprapubic incision allowed purulent matter to escape. The appendix was identified and found normal. Gas escaped freely when an incision was made in the epigastrium. A perforation was found in the first part of the duodenum. This was closed in two layers and the abdomen was flushed with warm saline solution and drained. After-treatment: Fowler's position was adopted. Nutrients were given per rectum, strychnine, &c. The pulse gradually got worse, rising from 126 to 150, and the patient died at 6 P.M. the same day.

CASE 12.—A male, aged 26 years, was admitted on Oct. 31st, 1908, as a case of appendicitis. The history was that of having felt unwell for eight days without definite symptoms beyond headache and constipation. On Thursday, the 29th, he felt slight epigastric pain and also vomited, a symptom which had not recurred up to admission. There was no history of dyspeptic symptoms. On admission the face was pallid with malar flush and sweating freely. The abdomen was not distended and moved with respiration. Tenderness was marked in the epigastrium and right iliac fossa, and rigidity was present all along the right rectus and also in the epigastrium. The region where pain was most complained of was in the right iliac area. Over the appendix there were relative dulness, fulness, and gurglin The pulse was 94 and of a bounding febrile character; the temperature was 99·4°. The leucocytes numbered 6700 per cubic millimetre. On the next day the pulse was 84 per minute and quite strong. The patient did not look ill. In the evening, however, the pain became worse and the pulse rose to 96. Operation was therefore performed.

Operation:—The abdomen was opened over the appendix, but this organ was found normal though congested. An incision was then made in the middle line below the umbilicus. The small bowel near the ileo-cæcal valve was found congested with patches of hæmorrhage into its walls. The stomach was examined and found normal. The abdomen was then closed. On Nov. 2nd the patient went downhill rapidly and died in great pain at 8 P.M. The pulse before death was 90 per minute and the temperature was 98·6°.

At the post-mortem examination hæmorrhagic areas were found in the small bowel, but with no ulceration in these parts. On the first part of the duodenum there was a large chronic ulcer with a minute perforation in the centre through which leakage had occurred. Round the perforation there were adhesions of a soft nature and a large effusion of lymph.

CASE 13.—A male, aged 54 years, was admitted at 10 P.M. on Nov. 4th, 1908. The history showed that at 6 o'clock on the previous evening he was seized with very severe pain. This began around the umbilicus where it remained constant; in consequence he became quite collapsed. His bowels were moved on the morning of the 3rd, but not since, nor was flatus passed subsequent to the onset of the pain. He vomited once, the vomit being merely gastric contents. He received treatment at home for intestinal obstruction. As regards the previous history, for some years he had had slight pain after food, not occurring after every meal but felt now and again at long intervals. On admission the patient looked very ill, with pallid face. His tongue was covered with a thick, white fur. The position he voluntarily adopted was that of dorsal decubitus, with the legs drawn up. The temperature was 100·8° F. and the pulse was 106. The respirations were entirely thoracic. There was considerable fulness of the abdomen, uniformly distributed. General rigidity was present, most evident in the epigastrium, where it was of stony hardness. Tenderness also was a well-marked feature, being elicited all over the abdomen and in particular one and a half inches above and to the right of the umbilicus. It was more severe all over the right side than on the left. On percussion a clear note was obtained in front, and dulness in both flanks. When the patient lay on his side, however, the uppermost flank did not become clear. One inch of liver dulness remained.

Operation was performed by Mr. Grant Andrew at 11 P.M., 29 hours after the onset. A suprapubic incision of one inch was followed by a rush of gas and fluid of a turbid and yellowish nature. The source of the fluid was found to be a perforation, about the size of a threepenny piece, in the anterior wall of the first part of the duodenum. This was closed by a double Lembert suture, the first layer of catgut and the second of silk, and a piece of omentum also was tacked down over it. The abdomen was flushed with warm saline solution, drainage being established through both flanks and a glass tube in the suprapubic wound. After-treatment:—Fowler's position was adopted. The patient received saline solution per rectum, strychnine, four hourly, &c. He grew rapidly weaker and died 52 hours after the operation.

Glasgow.

THE SELECTION OF PATIENTS FOR SPA TREATMENT.[1]

BY NEVILLE WOOD, M.D. DURH., M.R.C.P. LOND.

As in the time allotted I have in more senses than one a great deal of ground to cover I will dispense with prefatory remarks and plunge at once *in medias res*. There is apt to be a certain evasiveness about balneological literature—a vice which is only to be avoided by bringing the fundamental facts into close apposition. Let me, then, ask your attention to a series of propositions, which, moreover, will save much repetition later on. 1. The principal aim of spa treatment is the furtherance of metabolism and the promotion of excretion. 2. The treatment, consisting as it does of the specialised use of what are known as natural remedies, is to be considered in relation to patients who cannot or will not employ those means at home, or who for some reason are not amenable to drug treatment. 3. Though spa treatment is often merely an alternative for other methods, it is pre-eminently suitable for cases on which it is desirable to concentrate a number of differing influences. 4. Spas may be used for prophylaxis, but climatic stations are to be preferred for convalescence. 5. Whenever there is a suspicion of visceral disease, a re-examination of the patient should be made immediately before his departure. 6. The best results from balneotherapy are obtained in the middle-aged and in young adults, while children and old people are more benefited by climatic influences. 7. Only by the most careful application of general principles can patients be properly selected for spa treatment; for though it has contributed much to the art of healing it has not added a single specific to the science of medicine. 8. The maxim "*Non curatur qui curat*" applies with especial force to those who are sent away from home. Full benefit can only be expected when the patient can leave business and domestic worries behind, and can face with equanimity the cost of the treatment and of the amenities of spa life.

Bearing these propositions in mind, let us pass in review the resources available and the manner in which they are turned to account, beginning with atmospheric influences.

At all spas it is considered of primary importance that the climatic conditions should permit of the enjoyment of abundance of fresh air. As if by a providential arrangement, mineral springs are usually found at a moderate altitude, in valleys clad on their slopes with sheltering trees, and shielded from the colder winds by the disposition of their neighbouring mountains. Where natural shelter is insufficient art steps in, supplying it by the construction of embankments, the erection of shelters, and by plantations of trees. A special advantage of such carefully planned shelter, in these resorts, is that patients may return to the open air comparatively soon after taking even a very hot bath.

Next, with regard to exercise, at most continental health resorts many miles of splendid walks have been laid out. Directions, distances, and gradients are so plainly indicated that regulated walking exercise is easily planned and carried out. While to meet the needs of those who will not exert themselves, except, so to speak, under the eye of a ganger, there are nearly always Zander gymnastic institutes, where every muscle can be brought into play, while in addition, manually given movements are available for those who may require them. In any case the custom of promenading while drinking the waters induces the patient almost unconsciously to take walking exercise to a fair extent.

Diet at the spas is a ticklish subject to handle, and in print we find it treated with a reserve which, though prudent, is uninforming. In former days the diet was governed by the name of the disease, or was influenced by the supposition that some of the articles of every-day consumption would clash with the action of the mineral waters. Physicians handed to the patient a stereotyped diet-sheet, and adherence to its restrictions was demanded. These

[1] Abstract of the Presidential Address read before the West London Medico Chirurgical Society on Oct. 8th, 1909.

printed lists are now seldom seen, and it is the fashion to say that the diet is ordered according to the constitution of each individual. In practice, however, what often happens is this. The forbidden and the permitted articles are written out in parallel columns, but when any of those allowed are distasteful to the patient, or any of those banned are more acceptable to him, an interchange of the items is effected. Now, used with discretion, that is by no means a bad way of arriving at a suitable diet for some patients. But when rigid restriction is necessary the attempt to control hotel cookery is often a signal failure, and the medical man can seldom count upon knowing the exact composition of his patient's repasts. It is true that at Homburg and some other spas commendable attempts have been made to solve this difficult problem of hotel cookery for invalids. Nevertheless, my present information leads me to believe that a patient sent away from home for a cure dependent chiefly on diet should be placed in a sanatorium, where the kitchen is under the direct supervision of a medical expert, and where whatever is ingested is controlled in accordance with the results of a scientific investigation both of the secretions and the excretions.

The next, and of course in many instances the principal resource, is the bath. Of chief importance in balneotherapy is the thermal factor. Next to that perhaps comes the dynamic factor—that is, the influence of water in motion. This is brought to bear in several different ways. At Plombières, by means of the "douche Bottentuit," a jet of water from a submerged pipe with a special nozzle plays upon the abdomen while the patient lies in the bath. At Mont Dore the bather stands or sits while a stream of very hot water falls upon him from above. At Aix-les-Bains the douche is projected from a short distance, massage being given at the same time. At Vichy the water falls on the recumbent patient from perforated roses as from a series of watering pots.

The mineralisation of a bath is of importance quantitively rather than qualitatively. By this I mean that the action of the dissolved salts depends chiefly on their concentration. The mineral elements act by conveying a stimulus to the cutaneous nerves primarily and through them to the general nervous system. They also render the skin hygroscopic, and thus modify its evaporative function.

I will pass now to the uses of mineral water taken internally. Some springs are so richly mineralised that an ordinary glass—9 ounces—represents a tangible pharmaceutical dose of their salts. Hence their primary action requires no explanation. Such springs are the Choussy Perrière of La Bourboule, the alkaline springs of Vichy, and the Marienbad Kreuzbrunnen. Many, perhaps the majority of cases, in which arsenic, sodium bicarbonate, and sulphate are indicated, can be treated just as well at home by these agents given in the conventional 6-ounce mixture. There are instances, however, in which the natural water answers better than the pharmaceutical product, a fact of which we are impelled to seek for an explanation. Some impute the difference partly to the imagination and partly to the change in the patient's whole manner of life; others, among whom are of course the spa practitioners, assume that the products of Nature's laboratory are always superior to those of the chemist, that minimal quantities of other salts contained in these waters are important adjuvants, or that there exist in them unknown elements of high therapeutic potency. These last suggestions are not to be dismissed with contempt. There exist springs of extremely feeble mineralisation containing only salts considered pharmacologically inert, yet the waters of which have been drunk by thousands of patients for hundreds of years and still maintain their popularity.

I now come to cases in which elimination by the kidneys is indicated. In these we find that pharmacy supplies us with a great variety of agents which may successfully compete with the products of the springs. In deciding, therefore, whether or not to send patients to them, we have to consider the general and the specific resources of the spas, while laying more stress on the former. Vichy and Neuenahr are the chief spas at which elimination by the renal route is promoted by the use of the alkaline waters to be found there. Vichy has a splendid bathing establishment, the best in France, and the only one fully equal to the corresponding institutions in Germany, but I must add with regret that it is one of the most badly kept French inland watering places. English patients, once a numerous contingent, have dwindled in number, but as the loss so sustained is made up by visitors from southern countries the stimulus to amendment is lacking. Neuenahr does not as yet attract many British invalids, so that those who go there will find it rather dull unless they have some familiarity with the German language. Curiously enough, Neuenahr is rather untidy—a rare exception among German spas.

Recently, waters of a different type have been advocated for renal elimination. The features they have in common are, besides the presence of lime, the small percentage of dissolved salts, which in some instances amount to less than 0·5 part per mille. A special point is made of their poverty in chlorides, a quality of great importance for those who lay stress on Widal's chloride deprivation theory. The stronger of these waters are found at Vittel, Contrexéville, and Wildungen; the weaker at Évian and Aix-les-Bains.

For centuries cystitis has been treated by the stronger waters of the earthy group as well as by those of the alkaline type, but probably in the future both sets of waters will be used merely as adjuvants since Sir Almroth Wright has shown us how to deal with the causative bacterial infections.

The slighter cases of nephritis are claimed by the renal spas just referred to, while there is a spring at St. Nectaire which is said to be specially beneficial when there is an associated phosphaturia. It need scarcely be said that in nephritis a suitable *régime* is of greater service than the use of any mineral water, and hence no very lasting benefit is to be expected from a sojourn at these spas; but if you desire to send a patient for a holiday to a place where his condition will be understood it is well to bear them in mind.

The spas whose speciality is elimination by the bowel are those with waters containing sodium sulphate, as Marienbad, Karlsbad, Brides-les-Bains, and Cheltenham. It is, of course, claimed that the fresh natural salt is more powerful in its action than the artificial pharmaceutical preparation. I have not been able to satisfy myself that this is the case, and I believe that if merely an aperient action is desired there is no special advantage in these waters. If, however, we look a little further ahead, to the restoration of the normal functions of the bowel, they are of the greatest possible value. The simplest explanation seems to be that they act, so to speak, as bowel lotions, and that they contain something which as it passes along the intestinal tract has a more beneficial influence locally than any corresponding pharmaceutical preparation. A curious point in connexion with sulphate waters is that in Germany and Austria it is believed that the cold waters have a much stronger aperient action than the hot, and that the function of the hot Karlsbad water is rather the treatment of diarrhœa. This is of practical importance, for if you happen to send to some of the Karlsbad physicians a patient suffering from constipation he is not unlikely to be told that the selection has been faulty and sent on to Marienbad, where the waters are cold. Brides-les-Bains is very much smaller than either of these places, much quieter, and less expensive. The waters are not very strong, and are so held suitable for cases not requiring drastic treatment.

Cheltenham deserves better appreciation than it receives. For many Anglo-Indians requiring eliminatory treatment it is superior to Karlsbad in all but prestige and hotel accommodation. The climate is mild and well suited all the year round for those who have lived in the tropics, while, if the patient requires bracing, a short tram ride takes him to a hill where the air, though soft, is invigorating. In addition to the sulphate spring there is an alkaline water akin to that of Vichy. Cheltenham has, in being available at all seasons, an important advantage over its continental competitors, which are at their best only in the early part of the summer.

It is universally admitted that the arthritic group of diseases—gout, rheumatism, and rheumatoid arthritis—are typically suitable for balneotherapy. These affections are placed in the list of indications by almost every watering-place in Europe, but the only sound method of selection is to regard, not the name of the disease, but the associated constitutional condition, which must be essentially one of disordered metabolism, generally coupled with defective elimination.

At Aix-les-Bains local treatment by baths and massage has been brought to greater perfection than elsewhere, and the heat of this place, lasting well on into the evening, is of much

advantage to patients taking frequent baths at high temperatures. For the same reason the mild climate of Bath makes it the best spa in England for the more delicate arthritics. Moderately robust invalids may suitably be sent to Droitwich for treatment by the strong brine found there, or to Harrogate, where there is a considerable variety of waters. The waters of Buxton are so feebly mineralised that it is difficult to explain the good results obtained there. Woodhall Spa may be described as a quiet place for quiet people or a sleepy place for sleepless people, but do not send patients to whom the brightness of continental spas appeals to Woodhall unless you are prepared to have them upbraid you for dooming them to a foretaste of the Buddhist Nirvana.

Perhaps one of the most interesting problems in practical balneology is that of the value of the treatment of heart weakness by salt and carbonated baths, initiated by the late Professor Benecke of Nauheim. Its adequate discussion, however, would require more time than is now at my disposal. When good results are obtained I believe they are to be ascribed chiefly to an improvement in general metabolism in which the cardio-vascular system shares. It is an error to suppose that "Nauheim treatment" and treatment at Nauheim are convertible terms. Physicians there do not consider themselves restricted to the employment of baths and scheduled exercises. They treat the patient, in fact, according to his condition, whether this implies simply inspiring him with hope and arranging for the supply of plenty of fresh air with suitable diet, keeping him in bed and administering drugs of the digitalis group, or the use in combination of modern physico-chemical methods.

The spa treatment of syphilis was for many years almost a monopoly of Aix-la-Chapelle. Now Aix-trained rubbers are to be found in London and other large cities, while at many spas Aix methods have been successfully copied. In Germany the chief alternative spa is Wiesbaden and in France Uriage. Aix-la-Chapelle is a large town. It has luxuriously equipped baths, but otherwise has no special attraction. The disadvantage in sending a patient there is that he is thereby practically labelled as suffering from a loathsome disease. This is well recognised at Aix, and strenuous attempts are made to attract arthritic and other patients for whom sulphur water is commonly prescribed, but as over 60 per cent. of all the patients and over 80 per cent. of the English patients who go there are the subjects of specific disease the stigma, whether deserved or not, is not an easy one to efface.

The conditions of life at Uriage are such as to render it an ideal place for the treatment of syphilis. The composition of the water is exactly that which theoretically is required, and, what is more important, the results obtained are excellent. It has been shown that in syphilis the body suffers a considerable loss in iron, in lime and soda salts, and a still greater loss in the element sulphur, which last must be of importance, since there is in the blood twice as much sulphur as iron. Now, it is precisely these substances that are contained in Uriage water, which, be it also noted, is isotonic with the blood. It is therefore reasonable to suppose that this water is ideally adapted to effect a correct remineralisation. Though it cannot be claimed as a fresh specific, the mercury-sulphur synthesis is, I believe, the most effective method known for the destruction of the syphilitic virus. There is one contra-indication to the combined use of mercury and sulphur—irritability of the bowel. This is probably due to the fact that both these agents are intestinal irritants. It must also be remembered that in nephritis all intensive mercurial treatment is dangerous.

In conclusion, I propose to draw a few comparisons between French and German spas. In France the spa towns seem to have grown up naturally, as do English towns, the comparatively wide village main road developing into the principal street by the erection of the finest buildings, and minor streets shaping themselves as requirements have grown, without any prevision that when the town increased in importance their narrowness would cramp its grandeur. In Germany, whether this foresight has been actually exercised I do not know, but towns when fully developed look as if they had originally been laid out with a view to their ultimate expansion. The result is that German spas have better planned and more spacious public recreation grounds, and that the streets present an air of greater dignity. In France *some* of the spas are shamefully kept; the banks of lovely little streams are strewn with ordure, and along the roads there are sights so disgusting that they are best left undescribed. In Germany, on the other hand, we find a cleanliness so scrupulous that it is reminiscent of the deck of a man-of-war.

In France the tendency is for each spa to specialise in the class of cases it seeks to attract. We are given a list of the diseases considered to be amenable to the treatment, and also those which on no account should be sent. Both in selection and rejection, but chiefly in the latter, these lists sometimes seem to be quite arbitrary. As an example, it is stated of one of the springs that the water has no influence above the diaphragm. In Germany, on the other hand, many resorts claim to benefit nearly the whole list of the diseases, and this because, less regard being had to the specific nature of the disease than to underlying constitutional conditions, it is held that these can be beneficially influenced in one way or another by totally dissimilar therapeutic agents. In general balneological equipment the Germans hold a decisive lead. The *personnel* of the bathhouses is under better discipline, and to secure proper attention incessant tipping is not required, as is so frequently the case in France.

It is frequently said that in France there are more distractions, but I think that if villages and towns of the same size are compared in the two countries there will be found only one difference. In Germany public gambling is forbidden, whereas in France even quite tiny spas provide this form of amusement, if that is the proper name to give to games which steadily transfer bullion from the pockets of the players to those of the managers of the casinos. As M. Blanc of Monte Carlo remarked: "Rouge wins sometimes, Noir sometimes, but Blanc always."

For a short time, during and after the Boer war, Englishmen were liable to insult in either country. That is a thing of the past, but I have not been able to notice that the recent Anglo-French *entente* or Anglo-German recriminations have made the attitude of the French more friendly or that of the Germans more unfriendly.

My reason for making these remarks and many others scattered through this paper is that the environment and general resources regarded in connexion with the temperament of the patient are often more important than the analysis of the waters with reference to the name of the disease.

Elvaston-place, S.W.

OBSERVATIONS ON ANKYLOSTOMIASIS AND ITS COMPLICATIONS IN EASTERN BENGAL.

BY R. W. BURKITT, F.R.C.S. IREL.

BY the evidence of the microscope and the results of treatment one finds that in this part of the country a very large proportion of the illnesses and deaths have as their predisposing factor the ankylostome worm. This climate is hot and very damp, and the country is low lying. There is no proper disposal of fæces; the tanks, rivers, and streams are used in this order—for defæcation, urination, washing of body, washing of clothes, washing of mouth, and then drinking. Pumps are practically unknown; the eating of earth is common; food is only slightly cooked. The habits of the natives are particularly favourable to the spread of this worm. The following observations are very noticeable: that the more low-lying and damp the situation, the more congested with habitations, the more impure the drinking-supply, the more dirty the habits of the natives, and the closer defæcation takes place to the dwellings, the greater will be the number of persons infected by and suffering from ankylostome worms. The reverse of these conditions will show a proportionately smaller number infected. When the soil dries up in the dry season this disease decreases remarkably.

If a number of natives infected with ankylostomes and suffering from the symptoms of ankylostomiasis are confined in a compound with strict supervision, so that they receive all their food (rice and pulse) boiled almost to a jelly (for at least three hours), it is wonderful to see how they improve in all respects, although they have received no medicinal treatment. They have been receiving digestible food three times

a day instead of indigestible food twice a day. Rice and pulse as eaten by the native here are of very little value to him. They are boiled for only half an hour and merely the outside surface is digested; hence the residue is large and he therefore eats and defæcates largely twice a day (the microscope showing the fæces to be principally made up of undigested rice).

The commonest symptoms here in adults are weakness and irregular diarrhœa; the commonest clinical signs are anæmia (often profound), ascites, and dropsy of the legs and the external genitals (made much worse by their habit of squatting). The most certain position to look for anæmia is the mucous membranes of the mouth, but especially the soft palate; the observer may often be misled by the conjunctiva. There is no condition here which can cause, clinically speaking, such profound anæmia as ankylostomiasis, neither chronic malarial saturation nor chronic dysentery or starvation can do so. In children the signs are often extremely vague and continue to be so until death unless treated; they will always complain of weakness and often of irregular diarrhœa, but they need not show much sign of anæmia. In both adults and children probably the only universal symptom is a feeling of great weakness and the next most common complaint is irregular diarrhœa.

In this country it would be quite safe to treat every case of dropsy among natives for ankylostomiasis; in children these cases are often complicated by round worms, but it is more likely that the ankylostome and not the round worm causes the œdema. Unfortunately this disease is particularly common during gestation, probably on account of the incurable native habit of eating clay during that period and on account of the mother staying so much at home in her fæcally infected area. In these cases the prognosis is bad for both mother and child if not treated at once; either miscarriage takes place at a late period of gestation or the child is born dead or dies soon after birth, or the mother dies during labour (generally from hæmorrhage), or after labour from many complications.

The two most frequent accompaniments of ankylostomiasis in these parts are amœbic dysentery and ulcerating mouth. In the dysenteric complication the microscope generally shows besides the ankylostome eggs, entamœbæ coli, entamœbæ hystolyticæ, balantidia coli, and myriads of bacilli. A mixture of ankylostomiasis and tropical dysentery in a previously ill-fed person, as nearly all natives are, is a most serious complication, and one that requires very delicate handling. This condition is just as common in children as in adults, and both invariably die if untreated, some quickly, while others hang on in a chronic state of absolute misery for some time, infecting all about them. There is no more awful picture of utter wretchedness and hopelessness than the native infected with ankylostomes and dysenteric amœbæ, and there is no disease where the prospect is more hopeless than here unless they are removed to an institution with strict supervision. In those cases which die rapidly the stench given off by the gangrenous and ulcerating bowel, mouth, and body of the poor wretch is unbearable.

The majority of natives in this damp, relaxing climate suffer unknowingly from suppurating gums, the Babu class perhaps particularly so. Europeans, unless they use some strong antiseptic tooth powder, nearly always suffer in this way. Unaware of what is wrong they come complaining of any of the following: bleeding from the gums, sore mouth, lips, tongue, and throat; ulcers on the lips, tongue, or throat; foul-smelling breath which someone else has noticed. Owing to the relaxing climate, no matter how well the teeth are brushed, unless an antiseptic is used the gums will eventually suppurate and fall away from the teeth, leaving a deep pocket of pus all round the mouth. The disease progresses until the teeth, which are generally perfectly sound in themselves, get loose and fall out from want of support of both gums and bone at either side. The gums and underlying bone, owing to their chronically inflamed and suppurative condition, gradually undergo contraction, absorption, and other changes, until the very root of the tooth becomes visible. Glandular abscesses and collections of pus in the planes of the neck are common results of this oral condition, although every tooth in the head may be absolutely sound. When ankylostomiasis supervenes on this state the mouth gets gradually worse and worse, until the patient eventually has ulcers, or partial or wholesale gangrene of the lips, cheek, or tongue, always beginning in that position which is in continual contact with the worst part of the originally infected gums. It is not uncommon to see nearly the whole tongue slough away or the whole of one cheek or lip.

Again, in dealing with a number of natives with this mouth condition the medical man will often be called to see a case of ankylostomiasis in which there has been steady but slow bleeding from ulcerated gums for several days without intermission. The patient is generally at death's door when he is seen, bled almost to the last drop, and unable to speak. Superficial necrosis of the jaw bone is also common. These affections of the mouth are not nearly so frequent in children as in adults. With a native who has no idea of sanitation and is not sufficiently educated to carry out the simplest directions, treatment of these cases outside a strictly supervised institution is impossible.

As to treatment of ankylostomiasis in this neighbourhood I have nothing new to say. This point only would I emphasise—that, unless the patient is under strict supervision on a purely milk diet, in bed and with the bowels kept gently open by salts for at least two days previous to giving the drug, there will not be thorough eradication, no matter what anthelmintic is used. I use β naphthol in 30-grain doses every two hours for three times on a completely empty stomach and bowels in the morning, and then a big dose of castor-oil two hours after the last administration of the drug. This means nothing in the stomach in the way of nourishment from the evening before till about 3 P.M. next day. Oil of eucalyptus I find equally efficacious, but the native dislikes the taste. In the dysenteric complication I first kill the amœbæ with ipecacuanha powder and then undertake the treatment of the ankylostomiasis. For the suppurative, ulcerative, and gangrenous conditions of the mouth no drug is worth mentioning in comparison with peroxide of hydrogen. It cleans everything quickly. I generally order the 10 vol. liquid to be used in the strength of 1 in 3 of water, the solution to be made on the spot as it deteriorates rapidly. For constant and continuous bleeding from the gums there is only one remedy, and it is invariably and quickly successful. It is calcium chloride given in one-drachm doses every two or three hours in plenty of water till the bleeding stops, which always occurs after one or two doses. Probably the reason why this hæmorrhagic condition is so common in this particular neighbourhood is because of the great want of calcium salts in both the water and earth, man and animals suffering greatly from the want of it.

The stamping out of, or the lessening of, this disease means merely the proper disposal of fæces. The adoption of this implies a little primary knowledge about the life-history of the ankylostome worm. Why, when the sick-rate and the death-rate from this disease are so great, cannot all children in infected districts be taught in school the few simple facts about this worm? This and a few items about the spread of water and fly-borne disease, such as cholera and dysentery, would be of much more value than all their other learning put together.

Chandkira, Sylhet District, Eastern Bengal.

A RECENT CASE OF TYPHOID SPINE.

BY C. JAMES WILSON, M.B., B.C. CANTAB.

THE following is an account of a recent case of post-typhoid spinal disease, a sequela of typhoid fever described by most writers on the subject as "typhoid spine." I am indebted to Mr. C. W. Mansell Moullin, under whose care the patient was treated at the London Hospital, for permission to publish the case.

The patient, an officer in the Mercantile Marine, aged 28 years, developed typhoid fever on Nov. 20th, 1906, while at sea; he was landed at Bombay, and after five weeks in hospital and ten days convalescence he rejoined his ship on Jan. 24th, 1907, apparently completely recovered. During his convalescence he had suffered from backache, but this entirely disappeared. The first definite sign of the sequela occurred three months later, in April, when after some sudden exertion he was seized with severe pain in the back, lasting about a minute. Three days later the same pain recurred while he was sitting still, and during the subsequent days he suffered from aching in the back on turning out of his bunk

in the morning, the pain wearing off with exercise. He continued duty for a week, but this backache becoming steadily worse he was at length incapacitated, and again entered hospital in Bombay on May 6th. Of his condition and progress while in hospital the only information is as follows. His temperature for the first week was from 100° to 102° F.; his chief symptom was severe pain in the muscles of the small of the back, always worse on the left side, the pain extending round to the abdomen and being accompanied with cramps of the abdominal muscles. There were no "starting pains," but there was always intense pain on waking if the patient had turned on his side during sleep. On May 12th he was operated on for supposed abscess in the region of the left kidney. During June there were two periods of high pyrexia, the temperature rising to 104° for three days on each occasion; the pyrexia was ascribed to malaria, from which the patient had previously suffered, although on these occasions there was no shivering fit, the only associated symptom being headache. Eventually the patient was sent to England, and on July 31st was admitted into the London Hospital. By this time the severity of the pain had subsided, and no further spasms of acute pain occurred. At this time the local condition was as follows: there were marked rigidity of the dorsi-lumbar spine, pain on jarring the spine, and deep tenderness over the first and second lumbar transverse processes. A radiograph showed much thinning of the intervertebral discs, with signs of necrosis in the vertebræ, and many osteophytes around them. An examination made to determine the patient's opsonic index with regard to the tubercle bacillus showed a high index and no evidence of auto-inoculation with tubercle toxins. On the other hand, an examination of the blood with reference to the typhoid bacillus showed a marked reaction to Widal's test, instant agglutination occurring with a dilution of 1 in 100, agglutination also occurring with a dilution of 1 in 1000. While in the London Hospital the symptoms completely disappeared, the latest persisting being rigidity. His recovery was uninterrupted, and he returned to sea at the beginning of 1908, since when he has enjoyed normal health.

This case presents the chief features common to the cases of "typhoid spine" described by American and German writers. Of these cases there are now so many recorded as to make it clear that the dorsi-lumbar spine is a not very uncommon site for the late activity of the typhoid bacillus. From a study of these cases the course of such an infection may be summarised as follows. During convalescence from typhoid fever, at a varying interval after the fall of temperature, which interval may be as much as three months, as in the above case, the patient complains of pain in the back. This pain may have developed gradually from a slight aching noticed when the patient first began to walk, or it may have set in later, perhaps as the result of some strain. The patient is quite incapacitated and confined to bed. There is intense pain on any movement of the lumbar spine; consequently there is rigidity of this part, and during any movement liable to involve flexion or rotation of the spine, such as the act of turning over in bed, he fixes himself by pressing his hands on his hips. "Starting pains" occur during sleep. There may be tenderness over one or two vertebræ, but often this sign is absent. There may be cramps of the abdominal muscles, or girdle-pain, or perhaps nervous derangements in the legs, such as alteration of the knee-jerks. A fulness of one or other flank may be perceptible; presumably this sign was present in the above case when the diagnosis of perinephritic abscess was made. In time there may appear a prominence of one or more lumbar vertebral spines, resulting in a permanent kyphosis. As regards constitutional symptoms, the temperature is generally raised, and the patient's condition suffers severely from pain and sleeplessness. After weeks or months of acute suffering, with remarkable intermissions and exacerbations of the intensity of the pain, the symptoms eventually subside, and complete recovery, with possibly some persistent kyphosis, results.

The condition can only be explained by assuming an invasion of the spinal tissues by the typhoid bacillus. The chief symptoms—namely, the excessive pain and consequent rigidity, must be due to acute inflammation of the periosteum and spinal ligaments. In some cases there is no evidence of any further lesion, and hence the term "perispondylitis," which has been applied to the condition by American writers. But in other cases there must also be an osteo-myelitis of the vertebral bodies; for instance, in this case now reported the radiograph showed plainly rarefaction of the bone, and in the case which I reported three years ago[1] there resulted permanent kyphosis with prominence of the second and third lumbar vertebræ; such signs indicate destruction of bone. Again, those cases which exhibit nervous symptoms indicate extension of the inflammation to the membranes of the spinal cord. Why should the lumbar spine be a favourite site for this specific periostitis or osteitis? The typhoid bacillus has been demonstrated in great numbers in the medulla of the vertebræ after death from typhoid fever; perhaps the muscular weakness which follows a severe attack renders the ligaments of the lumbar spine particularly susceptible to injury from even a slight over-exertion, such injury affording opportunity for the activity of bacilli already present just beneath the periosteum. On this hypothesis the condition originates in a manner similar to the common post-typhoid periostitis of the tibia or other bone. On the other hand, it is conceivable that the proximity of infected lumbar lymphatic glands may have a bearing on the question.

Cobham.

A CASE OF ENDEMIC CEREBRO-SPINAL MENINGITIS TREATED BY INTRA-SPINAL INJECTIONS OF FLEXNER'S SERUM; RECOVERY.

BY D. D. ROSEWARNE, M.R.C.S. ENG., L.R.C.P. LOND.,
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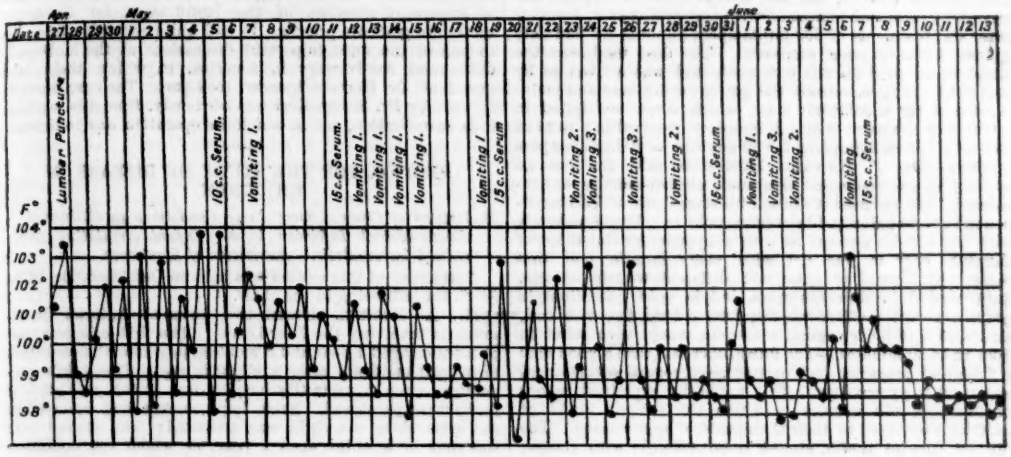
A MALE child, aged 5 months, was admitted into St. Mary's Hospital, under the care of Dr. A. P. Luff, on April 27th, 1909, with well-marked signs of cerebro-spinal meningitis. The mother stated that seven days before admission the child had had a "fit," and three days later she noticed that the head was "drawn backwards." There had also been several bouts of vomiting and "screaming fits." The bowels had been regular. The child was breast-fed from birth and there was no history of previous illness. Two children of the family, aged 5 years and 5 months respectively, were said to have died from meningitis in 1907.

On admission the temperature was 101·2° F., the pulse was 144, and the respirations were 44. The child was well-nourished and weighed 16 pounds 8 ounces. There were marked irritability and restlessness, and extreme retraction of the head was present. The pupils were moderately dilated, equal, and the reaction was brisk; there was no optic neuritis or squint, but vertical nystagmus was noted. The abdomen was slightly distended and the superficial abdominal reflexes were well marked. Kernig's sign was elicited and the legs were drawn up. The knee-jerks were brisk and ankle clonus was absent. Tache cérébrale was present. There was marked bulging of the anterior fontanelle. The respiratory and cardio-vascular systems were normal. A lumbar puncture was performed on the day of admission and 3 drachms of slightly turbid fluid were withdrawn for bacteriological examination. The report of Dr. B. H. Spilsbury showed that the diplococcus meningitidis was present in considerable numbers and that the polymorphonuclear cells were largely in excess. Agglutination tests demonstrated the fact that the case was one of endemic origin. One week after admission lumbar puncture was again performed, 8 drachms of turbid fluid being withdrawn, and 10 cubic centimetres of Flexner's serum were injected into the spinal canal. Two days later the child vomited for the first time since admission. The temperature showed a little less variation than it did before injection and the infant seemed a little brighter and less irritable. After another week further lumbar puncture was performed, 6 drachms of fluid being withdrawn and 15 cubic centimetres of Flexner's serum being injected. Vomiting still continued, but

[1] Post-typhoid Periostitis and the Typhoid Spine, Medical Chronicle, August, 1906.

the child began to take more notice of his surroundings. On the fifth day after this injection an urticarial rash developed, which disappeared in a few hours. Eight days later a third injection was given; 15 cubic centimetres of serum were again introduced into the spinal canal after withdrawing 6 drachms of fluid. The latter was less turbid than hitherto, while the bacteriological report showed that relatively fewer diplococci were present. Vomiting still continued, and during the next week the temperature varied a good deal, as shown in the accompanying chart, which records the temperature throughout, and also shows the effect of the injections. Head retraction at this date was less noticeable.



Ten days after the last injection a fourth was given, 15 cubic centimetres of serum again being introduced. Vomiting continued to be troublesome, and for three or four days the child had severe diarrhœa, but this was controlled by the administration of small doses of pulvis ipecacuanhæ compositus. As will be seen by the chart, the temperature rose to 101·8°, but on the following day became normal, and after rising to 103° six days after the injection again reached normal. The fifth and last injection was given six days after the fourth, upon which the temperature fell to normal and remained thereabouts for about seven weeks, when the child was discharged as cured. During this period the head retraction practically disappeared, the infant's condition improved daily, and he appeared to be quite normal. All the signs of meningitis ceased, and there was no appearance of imbecility. The child, who is still under observation, was quite normal when last seen—viz., two months after discharge from the hospital.

It may be worthy of note that no drugs were given except the pulvis ipecacuanhæ alluded to and an occasional purge. Undiluted citrated milk was given in appropriate amount throughout. The child lost 2½ pounds in weight during his illness, but on discharge he weighed the same as on admission—viz., 16 pounds 8 ounces. Whether recovery was due to nature, to repeated lumbar punctures, or to the use of Flexner's serum cannot be definitely stated until statistics are available. From observations it appears that the serum will be more extensively used, and many cases seem to have benefited from its use in New York and elsewhere. Whether the child will be normal in intellect in the future cannot be decided except by means of observation for many years, and it is hoped that this will be carried out as it seems probable that in this case it will be practicable. In conclusion, I must thank Dr. A. P. Luff, through whose courtesy and kindness I am enabled to publish this case.

Borough Asylum, Canterbury.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Presidential Address.—Electro-therapy in Gynæcology.—Placenta Prævia.

A MEETING of this section was held on Oct. 14th. The Presidential Address having been delivered by Dr. H. MACNAUGHTON-JONES on Pain Associated with Disorders of the Female Generative Organs,

Dr. J. CURTIS WEBB read a paper on the Use of and Indications for Electro-Therapy in some Gynæcological Affections. He remarked that in the treatment of gynæcological affections by electro-therapy different types of currents must be employed to produce different therapeutic effects. A rapidly interrupted induced current produced a sedative effect, and was useful in neuralgic conditions. A current with slow interruptions should be used to tone up relaxed muscle. When bare metallic electrodes were used they produced their action by ionisation of the metals; local effects were produced, and the result would vary with the valency and composition of the electrodes. Thus a positive zinc electrode amalgamated with mercury had a strong antiseptic action. Metallic ions were driven in, and the acid radicles of the fluids of the body being attracted, they exercised a cauterising and hæmostatic effect. If the electrode were negative the basic components of the body fluid were drawn out, producing a solvent or congestive effect. When the electrodes were covered by non-metallic substances, such as wool, there was no ionisation of metallic particles, and so no local effect was produced. Dr. Webb said that treatment by static electricity was of great value in certain cases, more especially when a general rather than a local effect was desired. In inflammatory diseases of the vagina or vulva, copper or zinc ionisation, used in addition to ordinary methods of treatment, was of great value, and he described a special electrode suitable for these cases. The methods of obtaining and controlling currents and the various types of electrodes to be used were also described. Methods of treating amenorrhœa, scanty menstruation, and dysmenorrhœa were also mentioned. In inflammatory affections of the uterus brilliant results might be obtained by zinc-mercury ionisation, which would probably largely take the place of curettage Much might be done for simple inflammatory diseases of the tubes and ovaries. As a rule, in these cases a course of abdomino-vaginal applications should precede intra-uterine treatment. Brief notes were given of a series of cases exemplifying these methods of treatment.—In a discussion which followed Mr. SPANTON expressed his surprise that in a discourse on electric treatment in gynæcology no mention had been made of Apostoli who was one of its chief pioneers. He had adopted Apostoli's treatment in cases of uterine myoma with hæmorrhage with most excellent results 20 years ago, but found the method somewhat cumbersome and difficult to carry out in hospital practice, and expensive and tedious in private patients, and these were probably the chief reasons why it had somewhat fallen into disuse.—Dr. AMAND ROUTH said that some years ago, when he had more time, he adopted

the methods advocated by Apostoli, and he had found real benefit from the use of the positive intra-uterine pole with a current of 60 to 120 milliampères in cases of uterine hæmorrhage due to "endometritis" or fibroids or subinvolution. He felt, however, that the time, trouble, and expense of the treatment were not justified by the results obtained as compared with those following ordinary methods of treatment. In severe cases of chronic subinvolution and endometritis curettement was preferable, and accomplished much more than mere removal of hypertrophic mucosa as suggested by Dr. Webb.—Dr. HERMAN STEDMAN said that he had selected some half-dozen cases of chronic endometritis and cervical catarrh, and had endeavoured to stop the discharge by means of ionisation with zinc and copper, but that after six treatments of 600 milliampère-minutes he had only in one instance been successful. The dose used was the standard adopted on the continent, and was arrived at by using the strongest current the patient could bear and maintaining it for a sufficient time, which when multiplied in minutes by the number of milliampères resulted in a total of 600—e.g., 30 milliampères for 20 minutes = 600 milliampère minutes.—Dr. F. HOWARD HUMPHRIS said that as an adjunct to gynæcological treatment electro-therapy was invaluable. He had used it himself for several years. Various ill-defined pelvic pains and backache could be relieved as surely with the faradic current as with a hypodermic injection of morphia, only it was not with every faradic coil that these results could be obtained; different lengths of wire were needed in different cases, but in most conditions in which a sedative effect was required a long fine wire coil, used with a bi-polar vaginal electrode, would give relief in from 15 to 20 minutes.—The PRESIDENT said that a good deal of bias and prejudice had existed with regard to electrical treatment in gynæcology. This might be explained by our ignorance of the manner in which the various kinds of electricity operated in their therapeutical applications. The late Dr. Charles Routh, almost simultaneously with Cutter, in the "sixties" advocated electrical treatment; then came Tripier, and, following him, Apostoli. When the latter's methods and results were published he (the President) had procured all his appliances and had tried both electro-causis and the faradic treatment. For the latter he used different coils and the high-tension battery, with the various sized coils recommended by Apostoli, which had just been referred to, and with the vaginal and intra-uterine bi-polar electrodes. With regard to electro-causis, he had so serious a result in one case that he abandoned it altogether. The patient suffered from cataleptic and hystero-epileptic attacks, associated with profuse hæmorrhages from a fibromatous uterus. Every practical precaution was taken in the application of the current both as to strength and antisepsis. At first she apparently did not suffer from the treatment. A skilled electrician was present at each sitting, which was given in bed; suddenly she developed symptoms of peritonitis, which proved fatal. Apostoli pointed out that this class of patient was particularly susceptible and that the treatment was attended with risk. With regard to faradisation in amenorrhœa and dysmenorrhœa, he had varying results both with the constant and faradic currents. In many cases, as might be expected, there was no influence on either the flow or the pain.

Dr. J. M. MUNRO KERR (Glasgow) reported a case of Cæsarean Section for Placenta Prævia. The patient, who was 28 years of age, was seen with Dr. J. McEwan, of Helensburgh; she was one week from full term, and had been curetted by Dr. Archibald Donald of Manchester for fibroid tumours of the uterus. She was considerably better for this operation, and soon after became pregnant. For a few weeks before full term hæmorrhage occurred from the uterus on several occasions, and an examination under an anæsthetic revealed the presence of a centrally situated placenta prævia. Removal of the uterus was likely to be soon required, and the chance of any further pregnancy was small. The friends having given their consent, he therefore performed Cæsarean section, delivering a living child. The uterus was then removed by supra-vaginal amputation. It contained a number of fibroids, the largest one on the anterior wall being about the size of the closed fist. The patient made a good recovery except for a slight attack of pleurisy on first getting up.—Sir WILLIAM SMYLY said that where placenta prævia was complicated by uterine myomata Cæsarean section followed by hysterectomy was undoubtedly the correct line of treatment, and he congratulated Dr. Munro Kerr upon its success.—Dr. W. S. A. GRIFFITH said that he had been convinced for some years that certain special cases of placenta prævia would be best treated, both in the interests of the mother and child, by Cæsarean section. In January, 1905, he was called by Mr. A. M. Crabtree of Weybridge to a woman, 38 years of age, who had had two severe hæmorrhages. The child was lying in the first position above the brim, the cervix closed and tough, the pelvis of normal size, and the vagina narrow. Both husband and wife expressed the wish that the life of the child should be saved, and readily agreed to Cæsarean section, which was at once performed. Both mother and child did well.—The PRESIDENT said that the case brought before them raised the all-important question of the justification for Cæsarean section in placenta prævia. It had quite recently given rise to one of the most important discussions at the McDowell Centennial Anniversary in America, in which their late president, Dr. Herbert Spencer, took part. The case brought forward by Dr. Munro Kerr was obviously, from the myomatous complication, one in which the operation was indicated.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases.—Some Liver Conditions in Childhood.—Pneumococcal Infection in an Infant simulating Generalised Tuberculosis.—Exhibition of Specimens.

A MEETING of this section was held on Oct. 22nd, Dr. G. A. SUTHERLAND being in the chair.

Mr. A. MANUEL showed two cases of Anterior Poliomyelitis involving the Four Limbs. The first case was that of a child, aged 1 year and 8 months, in whom the condition developed suddenly after a slight injury. The child's temperature when taken to the hospital was 100° F. and all four limbs were paralysed. Some improvement had occurred in the arms since the child was admitted. The second case was that of a child, aged 1 year, in whom the condition resulted from a sudden illness on August 15th; considerable recovery in the arms had already occurred, but there was still complete paralysis of all the extensors of the foot and leg.

Mr. A. RALPH THOMPSON showed a case of Extracapsular Fracture of the Neck of the Femur in a boy aged 6 years. The injury had resulted from a fall. The diagnosis was at first very obscure, but a skiagram revealed the true nature of the injury. The case had been treated by extension and Thomas's hip splint.

Dr. F. W. HIGGS showed for Mr. J. HOWELL EVANS a case of Congenital Hemidystrophy. The patient was a child aged 1 year and 10 months. When only a month old it was noticed that the left side of the tongue was larger than the right, and later that there was asymmetery of the abdomen. At the present time a marked difference could be observed between the sizes of the two sides of the body. It was pointed out that the condition in this case was progressive.—Dr. F. PARKES WEBER and Mr. J. P. LOCKHART MUMMERY discussed the case.

Dr. W. ESSEX WYNTER showed a case of Chloroma. The patient was a female, aged 3¼ years, showing very marked facial deformity which had been noticed since the middle of May. The face was unusually large and bony, with shiny, tense skin over the malar bones, and marked exophthalmia, especially on the right side. The glands about the neck were enlarged. The blood count showed red corpuscles, 3,630,000; white, 30,000; hæmoglobin, 56 per cent.; and lymphocytes, 66·2 per cent.—Dr. SUTHERLAND, Dr. T. R. C. WHIPHAM, Dr. F. LANGMEAD, Dr. E. I. SPRIGGS, and Mr. SYDNEY STEPHENSON discussed the case.

Mr. MUMMERY showed a case for diagnosis. The patient was a boy, aged 6½ years, with a spastic gait and very marked contraction of each tendo Achillis. He was only able to walk on the tips of his toes.—Dr. SPRIGGS referred to a similar case which had been regarded as one of hypertonia.—Dr. R. C. JEWESBURY pointed out that the case might be one of diplegia, as there were well-marked knee-jerks and Babinski's sign was obtainable.—Dr. HIGGS regarded the case as one of spastic paraplegia.—Dr. SUTHERLAND pointed out that there should be in that case some mental defect.—Mr. MUMMERY, in reply, said that there was no evidence of any mental defect.

Dr. A. DINGWALL FORDYCE communicated some notes on the Pathology of some Liver Conditions in Childhood,

with a report of three cases. Case 1 was that of a child, aged 7 years, with sub-acute yellow atrophy of the liver. A year ago the child had an attack of jaundice and since then had complained of pain in the left side of the abdomen. Seven weeks before death the child began to look ill and the abdomen was noticed to be swelling. There were diarrhœa and vomiting, œdema of the back, paresis of the left leg and left side of the face, and a squint. The temperature was 99° F., and the pulse was 144. Post mortem slight pleurisy and pericarditis were found. There was some bile-stained fluid in the peritoneal cavity. The stomach was dilated, and in the ascending colon there was an acute tuberculous ulcer. The liver was greatly reduced in size and almost flat, and its surface was irregular with well-marked yellow nodules. Microscopic examination showed yellow areas of hyperplasia and much fibrous tissue. Case 2 was that of a girl, aged 8 years, who was admitted to the hospital with caries of the dorsal spine. She died from persistent vomiting a few days after admission. The post-mortem examination revealed a fatty condition of the liver, which weighed 460 grammes. Case 3 was that of a boy aged 4 years and 8 months. The child was first seen on account of digestive troubles and on examination it was noticed that the liver was much enlarged. The child died after an operation which revealed malignant disease of the liver. At the post-mortem examination the liver was found to weigh 4½ pounds and to be studded throughout with new growth. A tumour was discovered in the ileum about 1 foot from its lower end. The kidneys were enlarged.

Dr. J. WALTER CARR read a paper entitled "A Case of Pneumococcal Infection in an Infant simulating Generalised Tuberculosis." The patient was a child aged 15 months. The case was at first thought to be one of acute pneumonia, but when after several weeks the condition remained unaltered with an irregular temperature it was thought to be one of general tuberculosis. Calmette's test gave a negative result. The child died and the necropsy revealed no trace of tubercle but a general pneumococcal infection. There was well-marked pericarditis. The right lung was universally adherent and the upper lobe showed old unresolved pneumonia; the left lung was also adherent. The peritoneal cavity contained about a pint of semi-purulent fluid.

Dr. HIGGS showed a specimen from a case of Lympho-sarcomatosis. The specimen showed an appendix infiltrated with lympho-sarcoma. The kidneys also showed diffuse infiltration with lympho-sarcoma cells.

Mr. IVOR BACK exhibited a specimen from a case of Acute Inflammation in an Appendix, involuted into the lumen of the cæcum, which then formed the apex of an intussusception. The specimen was removed from a girl, aged 8 years, by operation, the patient recovering.

MEDICAL SOCIETY OF LONDON.

Legislation in Regard to Anæsthetics.

A MEETING of this society was held on Oct. 25th, Dr. SAMUEL WEST, the President, being in the chair.

Dr. FREDERIC HEWITT read a paper, which is printed in full in this issue of THE LANCET, p. 1266, on the Need for Legislation in Regard to Anæsthetics and the lines upon which it should take place.

The PRESIDENT said that, considering the risks involved in the administration of anæsthetics, it was necessary to consider the present want of regulation in the matter.

Mr. L. MATHESON contended that to restrict qualified dentists from the administration of anæsthetics for dental operations was inconsistent, unnecessary, and prejudicial to the best interests of the public. The diploma granted to qualified dentists was a guarantee to the public that they were fit to practise dental surgery and to administer anæsthetics for dental work because it was an integral part of dental surgery. For dental purposes nitrous oxide was generally given, and he asked what evidence was there of danger to the public in qualified dentists giving gas. He had not yet heard of any fatality that had occurred in the hands of a qualified dentist. He did not admit that the general practitioner was a better anæsthetist than a dentist, and he thought that in a large proportion of cases the practitioner was not better than the dentist. The dentist as a rule was better trained in giving anæsthetics than the medical man. Referring to giving an anæsthetic and operating at the same time, he said that that procedure would gradually disappear.

Mr. A. L. FLEMMING said that supposing an emergency happened at a dental operation, such as choking from a foreign body in the larynx, would a dentist be qualified to deal with the case? There was nothing in his training which would ensure his being qualified to deal with such an emergency. If the Bill were passed as suggested by Dr. Hewitt that difficulty would be met. He gave details of how two Bristol dentists considered that the Bill from the point of view of the nation was satisfactory, and it was not thought that the dentists had anything to complain of if they were restricted from giving gas.

Dr. DUDLEY W. BUXTON said that Dr. Hewitt was endeavouring to secure that any man who gave an anæsthetic should be capable of doing so in a satisfactory manner. A Licentiate in Dental Surgery was fully qualified to carry out this work in dental operations, for he was competent to give such an anæsthetic and to act with rapidity and decision in case of accident. He did not consider that any medical man was necessarily qualified to give an anæsthetic in the same manner as a skilled anæsthetist, but he did think that the ordinary qualified dentist was in his own particular walk of life a skilled giver of anæsthetics in his own particular line. In the case of emergencies any man might make a mistake, and the highly qualified medical man was open to the charge of not always doing the right thing as well as the dentist. In regard to a dentist operating and giving gas at the same time, that dual procedure was constantly occurring, not only in country places, but also in towns, and medical men must be prevented from doing the same thing. It was drawing a red herring across the scent to say that that was an argument against dentists giving nitrous oxide gas.

Mr. J. G. TURNER said that the dangers incidental to the giving of anæsthetics were such that they could not expect the Licentiate in Dental Surgery to cope with them. In two years' hospital work it was impossible to imagine a dentist learning enough clinical and surgical knowledge to deal with emergencies. He was certain that the danger was just too great to allow the unrestricted administration of nitrous oxide gas by a Licentiate in Dental Surgery.

Mr. A. W. MAYO ROBSON pointed out that when operating in the country he had experienced considerable difficulty in consequence of general practitioners being unskilled in giving anæsthetics. In regard to dentists giving anæsthetics great difficulties must arise if that were prohibited, for dentists have for many years given gas and had given it extremely well. He thought it would be very difficult to forbid the administration of gas by dentists in country districts. He considered that a Licentiate in Dental Surgery was sufficiently qualified to give an anæsthetic in dental work.

Dr. J. VINCENT BELL said that in regard to country districts the dentist was often found to be more expert in giving an anæsthetic for a dental operation than the raw country doctor.

Mr. H. BELLAMY GARDNER declared that it must not be forgotten that public confidence in this matter should be maintained not only by individual but also by collective effort.

Dr. J. F. W. SILK asked for trustworthy figures to show that there were an enormous number of deaths from the administration of a general anæsthetic by unqualified persons. He wanted some reliable facts to show that legislation was necessary. One difficulty in regard to the Bill was in reference to its being put into force. If such action rested on the man in the street then legislation was of no value whatsoever. To take out of the hands of dentists the power of being able to administer nitrous oxide gas would be lamentable, and to place the administration of gas in the hands of a qualified medical man who possibly had never seen gas given would be a great misfortune.

Dr. HEWITT, in his reply, pointed out that it was impossible to supply reliable statistics concerning deaths under anæsthetics. In answer to Mr. Matheson, he gave details of a certain dental hospital where gas was given by qualified medical men in over half a million cases. On one occasion, through the absence of the medical man, the gas was administered by a qualified dentist, and on that occasion a fatal accident resulted. Within the last two years practically all the examining bodies have come into line in the United Kingdom and have made instruction in anæsthetics a

necessary part of the medical curriculum, so that in future medical men will be fully instructed in the giving of anæsthetics.

OPHTHALMOLOGICAL SOCIETY.

Presidential Address.—Pathological Pedigrees.—Exhibition of Cases.

A MEETING of this society was held on Oct. 21st, when Dr. G. A. BERRY, the new President, who occupied the chair, delivered his Presidential Address. He first expressed his keen appreciation of the honour the society had done him in electing him to the presidential chair. As one progressed the truth of the maxim *quot homines tot sententiæ* became more and more evident, and it was not only educating but inspiring to realise the steps which had led to the great advances and to get some idea of the manner of thinking and the intellectual environment of the author. There was scarcely anything so fascinating as the history of medicine. For many advances they could claim something more than rediscoveries; they were new discoveries, logical deductions from carefully collected observations and experiments, not merely irresponsible speculations. The practical man was an empiric, but now the science of medicine had not only overtaken but greatly outstripped the art; and, indeed, there were many reasons for treatment lagging behind. Practical therapeutics was one of the most imperfect of the arts. Surgery was perhaps the least subject to individuality, and it was in surgery that the greatest advances in treatment had been made of recent years. But the advances resulting from antiseptic surgery had led to over-confidence in, and too frequent resort to, operative interference, and that was no doubt favoured by the public. That, however, was merely a swing of the pendulum too far, and would right itself in time. The art of surgery had advanced, and was still advancing, in a way and to an extent it had never done before. The functional activity of the eye could now be estimated with every refinement. But beyond increased safety in operations, the advances in ophthalmic surgery had never been commensurate with those in general surgery. He then went on to deal in detail with the aims and results of some of the operations for cataract. In the Middle Ages the monks paid scrupulous attention to cleanliness of instruments, and they had an anæsthetic with which patients were treated, sometimes to the extent of losing consciousness, when painful operations were performed. Since 1866 no radical change had been made in the methods of cataract extraction which found general acceptance. Something better in the treatment of cataract was at least conceivable; there might be cure without operation, or prevention altogether might be possible. Useful as was iridectomy in the treatment of glaucoma, further advances in that direction might be made in the future. He did not think irido-dialysis would ever be revived. Nearly all the surgical interferences now in use for trachoma had their prototypes in ancient times. The treatment which gave the best results in the more severe chronic cases was now often employed in cases where it came to be an unnecessary mutilation. He regretted the tendency of the public to go to the optician for defects of vision, because the optician could not detect and treat the pathological condition which often underlay them. The President then entered into a historical survey of treatment of eye conditions, paying special attention to the Hippocratic school. Polypharmacy was largely practised by the ancients because they did not know the values or chemical reactions of drugs. He believed the use of mydriatics had been overdone. The advantages of inducing hyperæmia had long been known empirically, but Bier had now put the matter on a scientific basis. The efficacy of ionisation was very real, and though the practice was yet in its infancy there were many possible developments in the future, and the same was true of X rays and radium. In trachoma it was doubtful how far those remedies would take the place of surgery. In conclusion, the President declared himself a believer in the great future of medicine, both preventive and remedial, in which treatment by sera and antibodies which counteracted and stimulated the activities of the organism would play a great part.

Mr. PRIESTLEY SMITH made two communications, one a Note on the Making of Pedigree Charts, and the other a Pedigree of Congenital Discoid Cataract. In connexion with the last named Mr. Smith said that it almost exactly conformed to Mendel's law.—The paper was discussed by Mr. E. NETTLESHIP, Mr. R. W. DOYNE, Mr. J. HERBERT FISHER, and Mr. E. TREACHER COLLINS, and Mr. PRIESTLEY SMITH replied.

Mr. N. BISHOP HARMAN showed a new Retractor for use in Excision of the Lacrymal Sac; also Symmetrical Discoid Cataract in two sisters.

Mr. G. T. BROOKSBANK JAMES showed a case with very Unusual Fundus Appearances, and two cases illustrating Irido-sclerectomies by the Open Method in Glaucoma. He said that he was somewhat pleased with the latter operation, so far as he had gone, though some difficulty was caused by a certain amount of oozing from the vessels, which had to be stopped before the incision was made.

Mr. H. B. GRIMSDALE showed a case of Retraction of the Eyes associated with the act of Winking.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

Exhibition of Clinical Cases.

THE annual general meeting of this society was held in the library of the Royal Victoria Infirmary, Newcastle-on-Tyne, on Oct. 14th, the retiring President, Dr. R. S. PEART, being in the chair.

Mr. E. H. DAVIS of West Hartlepool was elected President of the society for the forthcoming session, and was invested with the badge of office.

Dr. THOMAS BEATTIE showed: 1. A man, aged 54 years, with Paralysis Agitans, whose case had been under observation for five years and in whom there was the typical general posture with retropulsion, exalted knee-jerks, tremors of the neck and facial muscles and of the legs, but none of the usual rotatory movements of the forearms and fingers. 2. A coloured sailor from a Brazilian warship suffering from Diffuse Peripheral Neuritis, affecting especially the posterior interosseous nerves of the forearms and the anterior and posterior tibial nerves in the legs. Care had been taken to exclude lead and the other usual toxic causal agents, and the man had come from a ship where there had been several cases of beri-beri. 3. Two cases of Specific Aortitis, with fusiform dilatation of the aorta, aortic regurgitation, and anginal attacks. Dr. Beattie brought forward these two cases in order to discuss the cause of these anginal attacks. He raised the following questions: (*a*) Were the anginal attacks due to the dilatation of the aorta similar to the pain of aneurysm and reflex through the sympathetic? (*b*) Were they due to the lack of proper distension of the coronary arteries, and consequent ischæmia of the heart muscle resulting from the aortic regurgitation and imperfect filling of the sinuses of Valsalva? (*c*) Were they due to actual narrowing of the coronary arteries from specific endocarditis similar to the specific condition of the aorta?

Dr. A. M. MARTIN exhibited: 1. A case of Femoral Aneurysm in a male, aged about 40 years, cured by extra-peritoneal ligature of the external iliac artery with chromicised catgut. The cause was unknown and it produced typical symptoms and signs, also pain radiating from the hip to the knee-joint. The sac was still present but pulsation was absent. 2. An interesting case of "Joint Mouse," the foreign body being a detached piece from the internal femoral condyle. The patient, a male, aged 25 years, when seen complained of symptoms typical of a loose semilunar cartilage. Five months before the operation the toe of his right foot caught against a steel plate in a shipyard. He fell down with his leg doubled up under him; the knee was locked for some time, and complete extension was never afterwards possible. At the operation a large piece of bone measuring $1\frac{3}{4} \times 1 \times \frac{1}{4}$ inch was found; it was coated with cartilage on its convex aspect, and this exfoliated shell comprised the greater part of the lower aspect of the internal condyle of the femur. Mr. Martin mentioned that he had once before seen a similar case.

Mr. H. BRUNTON ANGUS showed two interesting cases which he had previously treated for Joint Dislocation, and both of which had organic nerve lesions: 1. A male, aged

about 45 years, came with a sciatic dislocation of the hip-joint. About three months afterwards he returned with a huge mass of new bone growing from the antero-lateral aspect of the upper end of the right femur. This painless tumour extended upwards into the right iliac fossa and did *not* implicate the hip-joint. The overlying tissues were very œdematous and the superficial veins were dilated, so that the condition simulated a bone sarcoma. The man presented unmistakeable signs of tabes dorsalis, and the view was therefore taken that the new formation of bone was a para-syphilitic manifestation. 2. The second case was a male, aged 35 years, who 15 months previously came with a dislocation of the shoulder, which was reduced. Recently he was sent to Mr. Angus a second time with a diagnosis of sarcoma of the upper end of the humerus. This diagnosis was based on great swelling and œdema in the region of the right shoulder-joint, together with dilatation of the superficial veins and a marked degree of thickening of the upper end of the humerus. No other joints were implicated, but there was no doubt that it was a monarticular osteo-arthritis, and time had confirmed this view. This patient was developing symptoms and signs of general paralysis of the insane.

Dr. HORSLEY DRUMMOND showed: 1. A middle-aged man with two separate Saccular Aneurysms of the Thoracic Aorta, whose only symptom was pain referred along the left eleventh dorsal segment. There were no physical signs. The diagnosis entirely depended upon the X-ray evidence, and the skiagrams showing the condition were also demonstrated. 2. An elderly male with typical symptoms and signs of Thoracic Aneurysm.

Dr. S. S. WHILLIS showed: 1. A child upon whom he operated three weeks previously for a Chronic Otorrhœa of three years' duration and which had produced a Mastoid Abscess with Lateral Sinus Thrombosis. The operation was a modification of Ballance's method, a rectangular flap of the whole posterior wall of the cartilaginous meatus being detached and turned inwards. 2. A case after Removal of a Laryngeal Growth through a Killian's Tube.

Dr. A. PARKIN exhibited: 1. A case of Raynaud's Disease in a young adult female. There was a patch of gangrene on the heel, and both feet and legs were cyanosed. The radial pulse had a very small volume, and Dr. Parkin remarked that he considered this feature more than accidental. 2. An adult male who had Lymphadenoma with Paraplegia. There was a nodular mass in his liver and his legs were paralysed. When the patient first came under notice it was a question whether the paralysis was the result of a spinal lesion or due to the lymphadenoma. Retention of urine supervened, which Dr. Parkin said was a proof of spinal disease.

Dr. R. A. BOLAM showed: 1. A case of Lichen Ruber Moniliformis. The patient was a man who for four and a half years had had an eruption in the groin, in the ham, and in the region of the ankle. The eruption underwent little change and was painful at times, especially during weather changes. Itching was not now a marked feature, although present at first. The linear arrangement of the papules comprising the eruption was very striking and strongly suggestive of connexion with nerve areas. The patches appeared to occur in the first to the fifth lumbar areas. 2. A case of Nævus Unius Lateris in a boy who soon after birth was noticed to have roughened areas of skin on one half of the body. There was now a definite verrucose condition of skin in patches and lines, the arrangement of lesions suggesting a family resemblance to Case 1. The distribution was definitely unilateral, half of the scrotum and half of the penis, for example, being involved. Other areas extensively affected were the posterior scapula and the elbow. 3. Cases of Tinea Barbæ and Favus were also exhibited.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—At the opening meeting of this society on Oct. 20th Dr. John Campbell (Belfast) gave the inaugural address on Sepsis in Midwifery Practice, Dr. Adam Fulton, the President, being in the chair. Dr. Campbell said that since more than 2000 women die annually in England and Wales from puerperal sepsis, accounting for three-fourths of the total mortality of puerperal conditions, the subject was incontestably an important one and one that appealed to every general practitioner. The mortality from sepsis in lying-in hospitals was now as low as 0·1 per cent. or even 0·048 per cent. (Rotunda Hospital, 1908), which contrasted with a general mortality over the whole country of 0·22 per cent. to 0·23 per cent., although this was understating the case. Probably the true mortality was more nearly that of Manchester, which worked out at 0·56 per cent., or in its worst district as high as 1·4 per cent. The more stringent test of morbidity rather than mortality was now applied to lying-in hospitals, and the same thing had been worked out successfully in private practice. Of a series of 465 cases recently reported in 77 per cent. the temperature never exceeded 99° F. Bacteriological investigations had shown that in a normal puerperal woman before labour the genital tract might be divided into a septic zone below and external to the position of the hymen, an antiseptic but not sterile zone corresponding to the vagina, and a sterile region within the uterus itself. Digital examination and the changes of labour itself might, and frequently did, completely alter these distinctions. Dr. Campbell also dealt with unsuspected sources of infection about nurses, such as gumboil or varicose ulcers, and explained the position he took up with regard to douching. He laid much stress on the value of a sharp, large-looped flushing curette with long handle, to be used in every case where the hand had been introduced within the uterine cavity or where there was any possibility of placental débris remaining behind. He also devoted some time to the prevention of sepsis, where this was favoured by preceding septic conditions about the male or female genital tract.—A hearty vote of thanks was proposed by Dr. H. Michie and supported by Dr. W. R. Smith (Beeston).

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Oct. 21st, Mr. C. T. Holland being in the chair.—Dr. J. Hill Abram read a note on a case of Polycythæmia Megalosplenica in a male.—Dr. A. Stookes and Dr. E. E. Glynn related a case of Accidental Hæmorrhage and Chronic Uræmia in which bacillus proteus was found.—Mr. F. A. G. Jeans read a paper based on 10 consecutive cases on which he had operated for Perforative General Peritonitis. There were two cases of perforated duodenal ulcer and eight cases of general peritonitis due to perforative or gangrenous appendicitis. The series included four children of 15 years or under. There were two deaths, both being amongst the appendix cases. One child of 11 died from pneumonia on the fourth day, the necropsy showing a clean peritoneum, although the symptoms had dated from four days before the operation. In one case the patient was four and a half months pregnant but recovered without abortion. One man died on the tenth day after a small secondary abscess had been opened. In the pregnant case no suprapubic tube could be used to drain the pelvis. All the cases were treated with slight modifications of the Murphy method and Mr. Jeans suggested that possibly the continuous administration of salines might act as a vaccine in appendicitic cases by the absorption of solutions of the products of the bacillus coli, but he left this to the vaccinators and the immunisers.—Mr. F. T. Paul mentioned 15 cases under his care during the last year of which 4 had died, 2 from perforated duodenal ulcer. In duodenal cases he recommended closure of the pylorus and gastro-enterostomy if the patient could stand it, as he considered death to arise from secondary leakage. He did not interfere unduly with the peritoneum unless very foul, and he washed it through a double tube. He did not use lumbar drainage, but relied upon a long finely perforated silver tube in the pelvis and packed down to the perforation. He strongly advocated the continuous instillation of saline under the skin by Barnard's method and also the Fowler position, and thought purgatives desirable.

UNITED SERVICES MEDICAL SOCIETY.—The opening meeting of this society was held on Oct. 13th at the Royal Army Medical College, Millbank, S.W., when the President, Surgeon-General A. M. Branfoot, I.M.S. (retired), delivered a short address in which the work and progress of the society were reviewed. A plea was made for attention being paid to clinical work, and the subject of neurasthenia—which disease was the cause of a vast amount of inefficiency in the Services—was commended for study.—Lieutenant-Colonel P. J. Freyer, I.M.S. (retired), then read a paper entitled "Total Enucleation of the Enlarged Prostate: Practical Observations on the Operation." The development and anatomy of the prostate with the pathological changes of the enlarged organ were first described and illustrated by sketches. The operation in detail and after-treatment were then given.

664 total enucleations had been done in patients varying in age from 49 to 89 years with an average of 69 years. The average weight of the prostates removed was about two and three-quarter ounces, and ranged from half an ounce to 17 ounces. Nearly all the patients were in broken health. The mortality from all causes was 6 per cent. and was steadily decreasing from 10 per cent. in the first hundred cases to 4·24 per cent. in the last two hundred. As a result of the operation a patient regained the power of retaining and passing his urine naturally without the aid of a catheter. Return of symptoms or contraction at the seat of operation leading to stricture and fistula did not occur, and there was no diminution in the sexual power after the operation. A number of prostates which had been removed by Lieutenant-Colonel Freyer were exhibited.—Major C. G. Spencer, R.A.M.C., Lieutenant-Colonel Sir R. Havelock Charles, I.M.S. (retired), and Colonel C. H. Joubert de la Ferté, I.M.S. (retired), took part in the discussion, and the proceedings terminated with a hearty vote of thanks to Lieutenant-Colonel Freyer.

ROCHDALE AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Oct. 21st, Dr. James Melvin, the President, being in the chair.—The President delivered an interesting and instructive address on Faith Healing. Reference was first made to "touching for the King's evil," a practice introduced in the time of Edward the Confessor, and an account was given of the religious ceremonies and formulæ associated with the passing of the Royal hands over the face of the kneeling patient. Wart-charming had been practised from the earliest times, and high authority could be cited for its efficacy. Hypnotism was originated in the eighteenth century by Mesmer and practised by him with great success in Germany. In Paris he reached the height of his fame, patients being so numerous that he delegated his mesmeric functions to a tree. As the result of the findings of a special Government Commission Mesmer was utterly discredited. Next an account of Mrs. Eddy's views as to the non-existence of matter and pain was given. A computation of her probable profits from her own patients and from the training of teachers of her cult amounted to £500,000. Copious quotations were given from Mrs. Eddy's book, "Science and Health," to illustrate her teaching.—An interesting informal discussion followed, several members relating from personal experience their knowledge of the practices of "Christian Scientists."—Dr. Menzies proposed, and Dr. Cox seconded, a vote of thanks to the President for his address, which was carried with acclamation, and Dr. Melvin replied.

ROYAL MEDICAL SOCIETY, EDINBURGH.—The first meeting of the session of this society was held on Oct. 15th, when Dr. F. E. Reynolds read a dissertation on the Wassermann Serum Reaction for the Diagnosis of Syphilis and Parasyphilitic Diseases. At the second meeting held on Oct. 22nd the following gentlemen were elected annual presidents: Dr. D. Maxwell Ross, Dr. R. C. Alexander, Dr. R. C. MacQueen, and Dr. A. Fergus Hewat. Dr. Alexander described two cases in which acute abdominal symptoms had led to laparotomy being performed but in which no cause for the condition could be found.

ANOTHER CASE OF VERONAL POISONING.—At an inquest held recently by Mr. A. Schröder at Paddington it was proved that the deceased, a woman, aged 40 years, had taken rooms in a lodging-house two weeks before her death, and had made statements to her landlady to the effect that she was in straitened circumstances. One day her room door was found to be locked and on its being broken open she was found lying unconscious with an empty bottle near her, which had contained tablets of veronal. The medical evidence showed that death, which followed shortly afterwards, was due to veronal poisoning. The empty bottle had contained 25 tablets, each sold as containing 5 grains of veronal. Dr. Tanner, who gave evidence, called the attention of the jury to the unrestricted sale of tablets such as the deceased had purchased, and they added to their verdict of "suicide while insane" a rider recommending the adding of veronal in the form described to the schedule of poisons.

Reviews and Notices of Books.

The Cambridge Natural History. Vol. X.: Crustacea and Arachnida. By GEOFFREY SMITH, M.A., A. E. SHIPLEY, F.R.S., H. WOODS, M.A., CECIL WARBURTON, M.A., and D'ARCY THOMPSON, C.B. London: Macmillan and Co., Limited. 1909. Pp. 566. Price 17*s.* net.

THIS volume completes the Cambridge Natural History, and although it is the last volume to appear it is really No. IV. of the series, which is arranged in an ascending order from the Protozoa up to the Mammals. Nearly 15 years have elapsed since the production of the two earliest volumes, which were published in 1895, and in consequence the authors of the new volume before us are not all of them those to whom the work was originally assigned. The delay indeed, to which the editors, Dr. Shipley and Dr. Harmer, now Keeper of Zoology in the Natural History Museum, refer with regret in the preface, was due to the untimely death of one of those at first selected for the important group of the Crustacea. The excellence of the single chapter which the late Professor Weldon left in a fit state for publication shows with what admirable thoroughness that distinguished zoologist had intended to carry out his undertaking. Nevertheless, as a new contributor had to be selected the editors have done as well as they could possibly have done in requesting Mr. Geoffrey Smith of New College, Oxford, to fill the place so prematurely vacated.

Like its predecessors, the present volume is largely technical in treatment, but the paragraphs setting forth details of structure are agreeably tempered by lighter sections dealing with habits; more particularly is this the case with the spiders, whose predaceous lives, singular matrimonial customs, and web-weaving proclivities lend themselves to a treatment of this kind which cannot be meted out to the more stolid and humdrum crustacea, who, moreover, advertise themselves less to the would-be observer. Even in this group Mr. Smith has some interesting facts to tell us of the robber crab, which is now certainly known to climb cocoanut palms in search of its favourite and apparently only food at the present day. At stated seasons the robber crab scurries back to the sea, and its young are as purely marine in their lives as the parents are terrestrial, or, as has been said, even arboreal. The robber crab, which is really not a crab in the stricter sense of that word but an ally of the hermit crab, which seeks shelter, as is well known, for its soft and tender tail in the disused shell of a whelk, grows to so large a size as 1 foot. As these crustaceous animals are not as a rule very large, it is not without interest to note that our common lobster, at least the American specimens of the same, do, according to Mr. Herrick, reach no less a length than 20 inches and a weight of 25 pounds. Both these instances, however, pale before the giant crab of Japan, Macrocheira kämpfferi, which is "supposed to be the largest crustacean in existence, sometimes spanning from outstretched chela to chela as much as 11 feet." The body of this crab is not quite so ungainly as might be inferred from the above quotation, and, even admitting the statement of Herodotus and Mr. H. G. Wells, arthropodous creatures do not ever reach colossal dimensions. The hugest forms appear to belong to the totally extinct Eurypterida, to the consideration of which a chapter is devoted by Mr. Henry Woods. These animals, which reached a length of 6 feet, have been utterly extinct since the Palæozoic epoch. In many respects those great water dwellers of the past resembled the king crabs of to-day, and thus presented an affinity to the scorpion tribe rather than to the crustacea.

The scorpions themselves are a most extraordinary group of animals, in their unaltered persistence upon the globe, as well as in certain details of life. They have existed since Silurian times, and those ancient forms to the eye of even the instructed observer differ but slightly from living scorpions. Mr. Warburton replaces Mr. Woods in taking up the tale of these arachnids, and has plenty to say of the remarkable way of life of what are now entirely terrestrial creatures. As is so often the case with carnivorous animals, as, for example, the serpents, scorpions can maintain life for a long time without any food. They appear to be entirely deaf and to see but indifferently. On the other hand, the tactile sense is acute, and scorpions perform somewhat elaborate antics at the breeding season like their allies the spiders. Mr. Warburton doubts the extreme ferocity with which they have been credited and will have nothing to do with the legend that when thwarted and annoyed they sting themselves to death. A French observer, M. Fabre, established colonies of scorpions in his garden and investigated with thoroughness the ways of life of these arthropods. The wooing of the scorpion is accomplished with resolution and with none of the delicate hesitancy which influences the spider when in quest of a mate. The male scorpion leads the wooed one firmly by the claws to a convenient spot, where he excavates a burrow with one hand, so to speak, while he holds her with the other. But before making this temporary home the two promenade amicably for an hour or more up and down, holding hands the while. Domestic life is, however, but short, for in most cases, Mr. Warburton informs us, the marriage festivities are ended by the female eating up her husband.

Mr. Warburton is also responsible for the section dealing with the spiders, whose anatomy is described with much detail and, like all other parts of this volume, with many and well-selected illustrations. Allied though the spiders are to the scorpions, the venomous bite is effected by the cheliceræ, which are mouth appendages, while in the scorpions the bite is non-venomous, but the poison is expressed through a sting at the end of the tail. The bite of the spider seems to be under the animal's control as to whether it shall be venomous or not. Mr. Warburton thinks that the varying reputation of the tarantula is accounted for by this. The "tarantula" is a spider whose name must in any serious work be written in inverted commas, since the term, like "mosquito," is of general application. Spiders of quite different families have been indifferently called "tarantulas." The panic caused by the appearance of a spider in the retiring chambers of a certain class of lady is not therefore without some justification. Many gruesome tales have been told of the effects of virulent foreign arachnids. A South European lycosid, which has perhaps as much claim as any spider of the district to be *the* tarantula, bit a mole which died 36 hours later. A bee struck in the right place died at once. Farm labourers have died or been seriously invalided by the bite of a latrodectes, and numerous stories can be got together of the dangerous qualities of many species of spiders.

Space does not allow of further extracts from this entirely readable work, but enough has been said to show the nature of a part of its contents. The more technical details are, as is the case with all the other volumes of this indispensable treatise, in most competent hands, skilled not only in the actual facts dealt with but in their presentment to the reader in an easily assimilable form. The only complaint which we have to make is that the groups are in some cases rather shortly treated. This seems to us to be especially the case with the crustacea, and among the crustacea with the isopods and amphipods. But to cover all the allotted ground in a volume which must at least roughly correspond in size with foregoing volumes could not have been an easy task, and compression and even omission have proved to be necessary. It may be fairly said, however, that nothing of really first-rate importance has been omitted. The volume is a worthy close to an entirely admirable series; and we offer our congratulations to all concerned in its production.

A Text-book of Special Pathology for the Use of Students and Practitioners. By J. MARTIN BEATTIE, M.A. N.Z., M.D. Edin., Professor of Pathology and Bacteriology, University of Sheffield; Honorary Pathologist to the Sheffield Royal Infirmary and Royal Hospital; and W. E. CARNEGIE DICKSON, M.D. Edin., B.Sc., F.R.C.P. Edin., Lecturer on Pathological Bacteriology and Senior Assistant to the Professor of Pathology in the University of Edinburgh; Assistant Pathologist, Royal Infirmary, Edinburgh. With 191 illustrations and two coloured plates from original preparations. London: Rebman and Co. 1909. Pp. 599. Price 17*s.* 6*d.* net.

THIS book forms a companion volume to the text-book of general pathology by the same authors, of which we have recently published a review.[1] Like its predecessor, it aims at presenting the teaching of the Edinburgh school and the authors acknowledge their indebtedness to Professor W. S. Greenfield, at whose suggestion the work was undertaken, for placing the notes of his lectures at their disposal and for his coöperation.

The book is divided into nine chapters, in which the pathological changes occurring in the various systems of the body are categorically considered. The general arrangement of the subject matter is convenient and easy of reference, while the classification of the lesions of each organ or system is good. The descriptions given are not exhaustive, but the salient features are clearly set forth and the principal objects of note are indicated in thicker type. The illustrations, which are numerous, are reproductions of photographs of actual specimens and are well executed, while the good quality of the paper used in the book renders them unusually clear and distinct. There are two coloured plates representing the various forms of normal and abnormal blood corpuscles. They are faithful reproductions of stained specimens, and they leave nothing to be desired in the matter of accuracy, while the descriptive notes are so arranged as to be clear and definite.

Diseases of the circulatory system are first considered, the morbid changes in the heart being succinctly described. In connexion with diseases of blood-vessels a clear account is given of atheroma, this term being taken to include arteriosclerosis and endarteritis deformans as well as the condition to which it is sometimes restricted. The second chapter, which treats of diseases of the blood and blood-forming organs, is worthy of special note, and contains a useful study of the changes in the bone marrow in disease, which is reproduced from a paper published by one of the authors.[2] The various cells found in the marrow are classified, and the reactions induced in this tissue by disease are divided into leucoblastic and erythroblastic, the latter being of either normoblastic or megaloblastic type in conformity with the Ehrlich terminology. A clearly written and up-to-date account is given of lymphadenoma or Hodgkin's disease, incorporating the work of Longcope, whose conclusions are given.

The third chapter is devoted to diseases of the respiratory system, and among these tuberculous disease of the lungs and pleura is considered at some length. The authors believe with Ravenel that the commonest mode of entry in the human subject, except in young children, is by way of

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[1] THE LANCET, August 21st, 1909, p. 533.

[2] W. E. Carnegie Dickson in International Clinics, vol. Series xvii., 1907.

the tonsils. They mention the recent work in connexion with the intestinal source of infection. Their account of the lesions in pulmonary tuberculosis is clear, and their classification of the varieties is convenient. This section is illustrated by numerous reproductions of photographs of tuberculous lungs.

Diseases of the digestive system are dealt with in the next chapter, and although all the important lesions are mentioned and briefly described, the accounts given often err on the side of brevity. The diseases of the ductless glands are next considered, including the thyroid, thymus, pituitary and suprarenals. The sixth chapter includes a general description of the diseases of the genito-urinary system and of the mammary gland. Abnormal conditions of the kidneys are described at some length, and the descriptions are clear and to the point. Diseases of the nervous system are briefly described, and numerous reproductions of photographs of specimens prepared by the Pal-Weigert method are given. Some of the descriptions might here also be lengthened with advantage. The concluding chapter deals with diseases of the bones and joints. The account given of rickets is good and is well illustrated. An unusually complete index is added, rendering reference easy and convenient.

The book should be a useful work for students as an introduction to special pathology and as a companion to systematic works on medicine.

Clinical Studies. A Quarterly Journal of Clinical Medicine. By BYROM BRAMWELL, M.D. Edin., F.R.C.P. Edin., F.R.S. Edin., Physician to the Edinburgh Royal Infirmary; Lecturer on Clinical Medicine in the School of the Royal Colleges, Edinburgh. Vol. VII. Edinburgh: R. and R. Clark, Limited. 1909. Pp. 395.

IN publishing the seventh volume of "Clinical Studies" Dr. Bramwell again records a number of interesting cases which were seen at the "Wednesday cliniques." Amongst these was a peculiar form of lead poisoning, with tremors and marked loss of vision, both for white and for colours, without any changes being apparent in the fundus oculi. The diagnosis rested between plumbism and intracranial tumour, but the occupation of the patient (employment in a paint manufactory), constipation, the state of the gums, attacks of colic, together with a fine muscular tremor in the right hand and arm were in favour of the former condition. This opinion was confirmed by a rapid recovery under sulphate of magnesia and iodide of potassium. Another case was that of spleno-medullary leukæmia with unilateral optic neuritis in which there was a rapid drop in the number of white corpuscles—440,000 to 10,400 per cubic millimetre. The case proved fatal. A particularly rare and interesting case was one of chronic pneumonia due to the pressure of a small aneurysm on the left bronchus. At the necropsy the left lung was found partially collapsed; it was of small size and lay at the posterior part of the cavity. At the end of the arch of the aorta there was a small aneurysm of about the size of a walnut projecting to the inner side and coming into contact with the main bronchus of the left lung, just below its point of origin from the trachea. On microscopical examination of the lung the pleura was found to be much thickened and the interlobular septa and general framework showed well-marked fibrous thickening; the walls of the air vesicles also exhibited a similar though less-marked condition. The air-cells were filled up with catarrhal cells mixed with a few leucocytes and granular matter. At places here and there were patches of semi-purulent material with interstitial thickening around—a chronic suppurative condition in relation to the small bronchi.

Dr. Edwin Bramwell is responsible for an article on the diagnostic and therapeutic value of lumbar puncture. He enumerates the circumstances in which this procedure has been found of use, especially drawing attention to the differential diagnosis of the various forms of meningitis, so enabling obscure cases of cerebro-spinal fever to be recognised, in which isolation and serum treatment are indicated. An analysis is given of 42 cases of progressive muscular atrophy and also of 42 cases of pseudo-hypertrophic paralysis and myopathic muscular atrophy.

There is much that is interesting in this volume, the record of cases being especially valuable.

A Text-Book of Mental Diseases. By EUGENIO TANZI. Authorised translation from the Italian by W. FORD ROBERTSON, M.D. Edin., and T. C. MACKENZIE, M.D. Edin. London: Rebman, Limited. 1909. Pp. 820. Price 24s. net.

IN his preface Professor Tanzi sets forth that he has endeavoured in this work, in due proportion, to reflect two tendencies that underlie modern psychiatry. On the one hand, there is the man who wants to know what psychiatry is; and on the other, the idealist who strives to ascertain what it will become. The one requires facts, and only those that are certain, harmonious, and of general practical value; the other is interested in hypotheses, in the direction that is being taken by an advancing science, in its past and in its future. It would appear that modern critics are indulgent to the man who collects facts uncritically, and unconsciously alters, exaggerates, and invents them, whilst they are implacable to him who guesses at the truth and naturally leaves his hypotheses undemonstrated, however rational, useful, and probable they may be. There are, nevertheless, alleged facts that are illusory and hypotheses that become verified. It would be better if there were more rigour in the examination of facts and less precipitation in the condemnation of hypotheses. This due proportion Professor Tanzi has preserved in a masterly fashion, and we know few works in which facts and hypotheses, placed alongside each other, are more judiciously blended, or in which the facts and hypotheses are more philosophically subjected to an impartial criticism.

As is now customary in psychiatrical works, the first few chapters are devoted to the general anatomical and physiological data of the normal and abnormal processes of mind. The account is good and adequate and not too long for a work which is not one of anatomy or physiology. In succeeding chapters sensibility, ideation, memory, the sentiments and the movements and other external reactions are considered, and it is with pleasure that we note that the physiology and pathology of these various conditions are placed in juxtaposition in the same chapters and are not divorced, as is too often the case, by being placed by themselves in different parts of the book. As regards our knowledge of structure, the author is of opinion that the facts of pathological anatomy, now definitely ascertained in cases of mental disease, considered in the light of experimental pathology, enable us to say whether certain lesions are diffuse or circumscribed, reparable or irreparable, recent or congenital, and hence also to connect them with some of the symptoms manifested during life, although they are very far from serving to reveal the psychical phenomena to which they correspond. We are enabled to arrive at a synthesis which makes it possible to regard a number of psychoses from a common point of view, and to refer their stages and clinical features to a definite series of material processes.

Professor Tanzi's theory as to the mechanism of hallucinations is interesting. The sensorial centres of vision are a looking-glass, those of hearing a resonator, those of

cutaneous sensibility an instrument for instantaneous signalling, and nothing more. The mnemonic representations of external phenomena are built up in other centres in the form of symbols, and these are direct symbols. From the centres of representation the direct symbols can pass to higher centres in order to form more general and more abstract conceptions, and these are symbols of symbols. The sensorial centres are of themselves unable to give any complete images, but can only reflect them. In normal conditions they only reflect the external objects that actually present themselves. To reflect also the mental images of objects re-awakened within us they must be in pathological conditions, or there must be at least unusual conditions, such as those of sleep. In order to give a satisfactory explanation of all varieties of hallucinations it is sufficient to suppose that the homolateral and contralateral paths that pass from the centres of sensation to the centre of representation acquire the power, which they never possess in normal conditions, of allowing impulses to travel in the reverse direction. A hallucination may be considered as taking origin as an idea or symbol but instead of forming associations with other ideas it flows back, either by the same homolateral and contralateral fibres by which it came or in some other way yet to be determined, to the sensorial centres from which it proceeded when it was of the nature of a sensation. Thus it becomes what it originally was, a sensation. It is, however, a sensation of an unusual character, that is, of a pathological character. This power of retrogression forms the special morbid character that determines the individuality of hallucination both as a psychological phenomenon and as a clinical symptom. The sensorial centres are importers in relation to external objects, but exporters in relation to the internal domain of transcortical thought. If owing to a pathological inversion they import from within it is natural that they should react in the only way in which it is possible for them to react—that is, by the production of sensorial images. In whatever way the pathological reflux may be effected it is important to recognise that a hallucination consists exactly in this reflux. Thus understood, the physiopathological process of hallucination acquires features that are altogether special and befitting the indisputable fact of its unique character. It is no longer simply an extreme intensification of a representational image but the morbid degradation of a representation that was once a sensation, and which, through being broken up under abnormal conditions, becomes again a sensation.

In mental pathology the question of classification is more complicated than in ordinary pathology. The diseases with which it has to do are less distinct. Apart from a few forms, such as progressive paralysis, alcoholism, and infantile cerebroplegia, only syndromes are known, and the same syndrome may be the outward expression of the most diverse diseases. The conception of disease implies a constant and definite, or at least approximate, correspondence between the symptoms and the organic morbid processes. Owing to the absence of such correspondence or doubt as to its existence the phenomena of insanity cannot all be included in a single view. Each person sees them from his own standpoint, and classifications are consequently either fallacious or incomplete. There is, however, amongst the later authorities a distinct tendency towards greater uniformity founded upon the rational classification devised by Kraepelin. Professor Tanzi's classification has much to be said for it, and yet further simplifies the grouping of morbid entities and syndromes.

The translation appears to us to be faithful, while the English in which it is couched is so good that it has the merit of concealing the fact that the work was originally in a foreign language. The work itself we regard as one of the best presentations of the science of psychiatry with which we are acquainted.

LIBRARY TABLE.

Diseases of Women. By J. BLAND-SUTTON, F.R.C.S. Eng., and ARTHUR E. GILES, M.D., B.Sc. Lond., F.R.C.S. Edin. Sixth edition. With 123 illustrations. London: Rebman, Limited. 1909. Pp. 554. Price 11*s.* net.—The appearance of the sixth edition of this well-known handbook shows that it has met with appreciation on the part of students and practitioners. The authors have made a considerable number of additions and have added several new sections. The first of these deals somewhat sketchily with injuries to the uterus, both gynæcological and obstetrical. Chapters have also been added on fibrosis uteri and adenomyomata of the uterus. By the former term the authors mean the condition of the uterus often associated with severe menorrhagia in which there is a marked overgrowth of the connective tissue in the wall of the uterus, the "arterio-sclerosis of the uterus" or "chronic metritis" of other authors. This change undoubtedly occurs in the uteri of all women after the menopause, but when it occurs prematurely and to an excessive degree it may give rise to very intractable hæmorrhage. The authors believe that it is produced by previous septic endometritis, sometimes puerperal in origin and sometimes the result of gonorrhœa. They maintain that the only treatment of any avail is hysterectomy, and for severe cases no doubt this is the correct treatment. Really severe cases of this disease are very rare, and Mr. Bland-Sutton has had exceptional experience since he has performed hysterectomy for fibrosis of the uterus no less than 67 times. It is a pity, therefore, that the description of the pathology is not given a little more fully; it would have been interesting to have had a microphotograph of the condition found in these cases with the elastic tissue shown by a differential stain. The account of adenomyomata of the uterus is short but good, although the authors express no opinion as to the origin of the glandular spaces and we are left ignorant as to which view they adopt. In consequence of the frequency with which the radical operation of total abdominal hysterectomy is being performed at the present day, the authors have devoted a chapter to injuries of the ureters. The description of Wertheim's operation itself would appear to have been written with little or no experience of the procedure, or otherwise the most difficult and important step of the operation, the wide removal of the cellular tissue at the base of the broad ligaments, would not be dismissed in such a description as, "The two layers of the parametrium are taken off as close as possible to the pelvic wall." Not a word is said about the use of Wertheim's clamps, one of the most important of the improvements introduced by him in his method of carrying out the operation, and one upon which he lays special stress in his latest writings on the subject. The statement that no trustworthy returns concerning the remote results are at present available is also only correct if it is intended to apply to the results of British operators only. Detailed results of Wertheim's first 120 cases in which five years had elapsed since the date of the operation, showing 51 cases, or 42 per cent., of complete freedom from recurrence, were published by Wertheim last year.

Dictionary of Ophthalmic Terms, with Supplement. By EDWARD MAGENNIS, M.D. R.U.I., D.P.H. Bristol: John Wright and Sons; London: Simpkin, Marshall, and Co. 1909. Pp. 67. Price 2*s.* 6*d.* net.—In the preface it is stated that many of the terms will "not be found in the ordinary medical dictionary." There are a good many medical dictionaries on the market, and it is not obvious

BEST COPY AVAILABLE

which is the "ordinary one," but if it has omitted some of the errors in Dr. Magennis's catalogue it is to the credit of the ordinary dictionary. To take two pages only: "canities" is not "a decoloration of the lashes"—it means a patchy decoloration of the hair anywhere on the head or body; similarly "chromidrosis" is not confined to the eyelids. By what perversion of Latin is the "nucleus candatus" dubbed the "candatum," and the "nucleus lenticularis" (unless the "asss lenticularis" is meant), called the "lenticularis" *tout court?* The "caudatum" (*sic*) is described as "a ganglion or free ring of grey matter circling round the lenticularis of the brain." The Latin is incorrect, the description is misleading, and the connexion of the subject with ophthalmic terms is obscure. We cannot conscientiously commend this dictionary to our readers.

The Pocket Medical Dictionary. Edited by W. A. NEWMAN DORLAND, A.M., M.D. Sixth edition. London and Philadelphia: W. B. Saunders Company. 1909. Pp. 598. Price 5*s.* net.—It would be idle to question the utility of a work which has seen so many editions in so short a time. Many persons obviously require such a dictionary, and to those many this little volume must commend itself on account of its compact, neat form and its excellent paper and type. Tiny and portable as it is, the book is very full and complete—in fact, it is almost too complete in its inclusion of words not strictly medical but dealing with collateral sciences. It would be impossible to compile such a collection of definitions without errors, and equally impossible to enumerate many of such errors within the space at our command. To select an example at random, the term "Charcot's disease" is usually applied to the synovial destruction in locomotor ataxia and not to insular sclerosis. Charcot in his admirable historical note on the latter condition lays great stress on the fact that from 1835 onwards Cruveilhier, Carswell, Turk, and many others had described it before M. Vulpian and he himself placed new examples on record in 1862.

Ann Veronica: a Modern Love Story. By H. G. WELLS. London: T. Fisher Unwin. 1909. Pp. 352. Price 6*s.*—We have travelled far from the day, almost 50 years ago, when Mrs. Jolly Newboy, of Pocklington Gardens, horrified that faithful chronicler of contemporary manners, Mr. M. A. Titmarsh, by asking her husband for "The Chubb Key." The points of difference between the young woman of Mrs. Newboy's date and Mr. Wells's latest heroine are almost inconceivable. But Mr. Wells's careful study has resulted in a novel which is extraordinarily clever but which is in places deliberately unpleasant. The honesty of purpose which has inspired the author is transparent, but surely it would have been possible to produce the necessary impressions in a subtler manner—possible, at any rate, for so really brilliant a writer as Mr. Wells. Ann Veronica is a young woman with views, but by no means a fool. Her struggles, her circumscribed home life, the way in which she just missed being a lady, her acquaintances the Widgetts and the various weird persons with whom she came into contact when she went out into the world "on her own" are drawn with extraordinary skill. So are all the scenes at the Imperial College, where she studied biology. Mr. Kipling, we recollect, made two of his characters who were engaged (the man was in the Indian Canal Department) talk of "barrage and aprons and waste water" which, as their host remarked, was "their style of spooning." So Ann Veronica first knew that she was in love with Capes over "a ribbon of sections of the developing salamander." Perhaps the best part of the book is the description of all the people "in the van" who were trying to reconstruct things in general. Thus, "The Goopes were the oddest little couple conceivable, following a fruitarian career upon an upper floor in Theobald's Road. They were childless and servantless, and they had reduced simple living to the finest of fine arts. Mr. Goopes, Ann Veronica gathered, was a mathematical tutor and visited schools, and his wife wrote a weekly column in *New Ideas* upon vegetarian cookery, vivisection, degeneration, the lacteal secretion, appendicitis and the Higher Thought generally, and assisted in the management of a fruit shop in the Tottenham Court Road. Their very furniture had mysteriously a high browed quality, and Mr. Goopes when at home dressed simply in a pyjama shaped suit of canvas sacking tied with brown ribbons, while his wife wore a purple djibbah with a richly embroidered yoke." Another delightful character, Miss Miniver, expressed herself thus: "When I am leading a true life, a pure and simple life, free of all stimulants and excitements, I think—I think—oh! with *pellucid* clearness; but if I so much as take a mouthful of meat—or anything—the mirror is all blurred." "Ann Veronica" will not commend Mr. Wells to any leaders of the ridiculous side of modern progressive movements, but the book should be read by all those who are striving towards an ideal for which the world is not ready, however desirable it may be. It should convince some of them that although they hold their views in all honesty those views may be unsound.

JOURNALS AND MAGAZINES.

The Edinburgh Medical Journal.—The October issue is a Special Educational Number, containing details of the curriculum at the Edinburgh Medical School, and a section on Medical Education in Scotland generally. Dr. Alexander James writes on the Infective Element in Consumption and seems inclined to believe that allies of the tubercle bacillus, such as the smegma bacillus and the grass bacillus, may be capable of assuming pathogenic rôles. Dr. H. A. Lediard discusses removal of the normal appendix as a routine measure comparable with circumcision. We trust that his views in favour of this procedure may not find general acceptance. Dr. G. H. Melville Dunlop contributes a brief paper on the Treatment of Constipation in Children and incidentally urges the advisability of giving them a more liberal allowance of cold water to drink than they usually receive.

The Caledonian Medical Journal.—The October number of this magazine commemorates the annual meeting of the Caledonian Medical Society at Lancaster in September last. The presidential address, delivered by Dr. David Blair, deals with some neglected problems in race preservation, among them the frequency of marriage between the unfit and degenerate, and the tendency to comparatively sterile unions between the more cultivated and provident members of society. Sir Dyce Duckworth sketches some incidents in the life of an old Stonehaven worthy, his own grandfather, William Nicol; and articles of literary rather than medical interest are contributed by Dr. H. McCalman on "The '15 and '45 in Lancaster," and by Dr. Lachlan Grant on "Books and Reading."

The Manchester Medical Review.—The August issue of this journal, which is now before us, contains an interesting account by Dr. Alexander Fraser of a visit to Lourdes and of the surroundings and features of this famous place of pilgrimage. A letter from Dr. J. H. Taylor reviews the unsatisfactory state of things prevailing at the Hope Hospital, Salford, which has led to an absence of medical candidates for the post of resident medical officer. More directly scientific matter is afforded in a paper by Dr. N. C. Haring on Operations on the Nasal Septum, in which the various procedures available are reviewed and the submucous operation is recommended.

New Inventions.

A NEW ELECTRIC RECTIFIER.

WE have had an opportunity of examining a new instrument for rectifying alternating currents into uni-directional impulses. It is supplied by the Premier Ampero Electric Co., of Premier House, Dover-street, London, W., and will be found a most useful and efficient apparatus for charging accumulators, such as are used for motor ignition and various kinds of medical work, in those districts where the current from the main is an alternating one. The principle upon which it is constructed is somewhat the same as that devised by Dr. Batten some years ago, but it is more efficient and rather more silent in action. A great feature of this instrument is that the point on the pressure curve of the alternating supply, where the current is picked up and cut off, is adjustable and can be arranged to take place at the voltage of the cells. At such times as the charging current is at a lower voltage than that of the cells undergoing charge the circuit is open and no current can pass back through the rectifier. When properly adjusted, which is a very simple procedure, there is no visible sparking at the contacts. On our visit we saw the instrument converting an 85-cycle alternating current into direct current and charging some ignition cells, and also running a small direct current shunt-wound electric motor, which latter, as is well known, will not work with an alternating current. If the main supply should fail from any cause the instrument cuts itself out of circuit automatically. It will work on any periodicity in ordinary use, starts and runs on any load, requires no attention, and is efficient in any position. The makers claim that the instrument will go for six hours a day for six months without attention, and then all that is needed is a new set of platinum contacts at a trifling cost. The directions to be followed are extremely simple, and altogether we have seen no better instrument for its purpose.

THE LONDON SCHOOL OF TROPICAL MEDICINE.

THE winter session of the London School of Tropical Medicine was opened on Tuesday, Oct. 26th, in the presence of a representative company of officials and scientific workers by an eloquent address from Professor W. Osler, who appealed, under the title of "The Nation and the Tropics," for the adequate endowment by this country of tropical research.

Mr. WHITELAW REID, the American Ambassador, presided over the meeting.

Professor Osler's brilliant address, which will shortly appear in full in our columns, showed conclusively the need for a central scheme by means of which the various expeditions sent out as Commissions of the Government, of the Royal Society, or of universities could be all kept in touch with each other and with any later work in similar directions. He considered that the necessary organisation, though it would demand £2,000,000 for its initiation and support, for the equipment of laboratories and libraries, and for the payment of professorial salaries, was quite within the range of possibility.

The AMERICAN AMBASSADOR pointed out that the pursuit of tropical medicine was the only rational course of a nation possessed of tropical dependencies. He outlined the conditions met with and dealt with successfully both in Cuba and Panama, and said that these were instances where the study of tropical medicine had made possible national progress.

Professor W. J. R. SIMPSON proposed a vote of thanks to Professor Osler, which was seconded by Professor RONALD ROSS.

Mr. NAIRNE, chairman of the Seamen's Hospital Society, proposed a vote of thanks to the Chairman, which was seconded by Sir PATRICK MANSON and briefly replied to by the AMERICAN AMBASSADOR.

THE ANNUAL DINNER.

The annual dinner of the London School of Tropical Medicine was held in the evening at the Savoy Hotel, Strand, Dr. A. G. Bagshawe, Director of the Sleeping Sickness Bureau of the Royal Society, presiding. A large company was present at the dinner, and the proceedings throughout testified to the great development of the work of the school and the necessity there was for some proper endowment. The school has had admirable results, has passed 1000 of its students into all parts of the Empire equipped to fight diseases of the deadliest sort, and has a claim, not only upon the city at whose water-gate it is established, but upon the whole Empire. This claim has not yet been recognised at all, but it is hoped that the publicity given to the good record of the school will change the position of affairs. It should be mentioned that Lord Sheffield (Lord Stanley of Alderley) is defraying the cost of an expedition to Fiji this year out of a fund with which he has endowed the school in memory of his son, the late Honourable Edward Stanley, the Assistant Commissioner of Northern Nigeria, who died last year at the early age of 30 from hepatic abscess following dysentery. But this is an individual instance of generosity.

Dr. BAGSHAWE took the chair at the dinner, supported by Lord Sheffield and Principal H. A. Miers, and among others present were Sir Patrick Manson, Sir William Collins, Professor Ronald Ross, Mr. H. J. Read of the Colonial Office, Dr. F. M. Sandwith, Professor Simpson, Sir Francis Lovell, Sir William Treacher, and Mr. P. T. Michelli (secretary). After the loyal toasts had been duly honoured the CHAIRMAN proposed the toast of "The School" in an interesting *résumé* of the development of tropical medicine.

Sir PATRICK MANSON followed with a eulogy of Professor Osler, "the orator of the day," as lecturer, philosopher, and guide, to which toast Principal MIERS, in the unavoidable absence of Professor Osler, replied with some witty remarks which were very well received. But Lord SHEFFIELD made the speech of the evening in response to the toast of "The Guests." He placed the claims of tropical medicine before his hearers from the utilitarian and humanitarian side alike, and he urged upon all engaged in the work the necessity of bringing their just demands for endowment loudly and frequently before those in authority. Government officials, he pointed out, were men like themselves, anxious to be right, anxious to do right, and liable to make mistakes in circumstances which they did not understand. It was necessary to make those in charge of the business of the country understand that it is their duty, their common economical duty, to the Empire to see that the servants of the Empire in its far dependencies receive all the aid in their work and all the chances of health preservation which modern scientific methods can afford. Lord Sheffield's speech was punctuated throughout with the applause of the company, and was an effective exposition of the aims of tropical medicine.

The proceedings closed with the toast of "The Chairman," ingeniously given by Mr. CANTLIE and responded to by Dr. BAGSHAWE in a brief sentence.

THE ROYAL DENTAL HOSPITAL. — The Royal Dental Hospital and London School of Dental Surgery held a conversazione at the Royal Institute Galleries on the evening of Oct. 20th. Sir Victor Horsley distributed the prizes and eulogised the spirit of unity existing between medical men and dentists. He also spoke of the administration of anæsthetics by dentists, declaring that all dental students should be instructed therein. He suggested that they might be taught the administration of anæsthetics other than nitrous oxides in general hospitals. The chief prizes were won by the following gentlemen: Scholarship (Dental Mechanics and Metallurgy), Mr. C. F. M. West; Entrance Scholarship, Mr. H. D. Stephens; The Saunders Scholarship, Mr. W. L. Jackson; Alfred Woodhouse Scholarship, Mr. E. L. Fickling; Robert Woodhouse Prize, Mr. G. J. Harborow; and Ash Prize, Mr. C. G. Colyer. After the distribution, Mr. E. T. Reed delivered a lecture, illustrated by lantern slides, on Caricature in and out of Parliament. Various scientific exhibits were made by Mr. Richard Kerr, F.R.A.S., Mr. A. Hopewell-Smith, Mr. S. Henson, Messrs. Newton and Co., Messrs. Spencer and Sons, Messrs. Watkins and Doncaster, Messrs. J. R. Gregory and Co., and Messrs. Baird and Tatlock.—The annual dinner of the staff and past and present students will be held on Saturday, Nov. 20th, at the Hôtel Métropole (Whitehall Rooms), under the presidency of Mr. C. F. Rilot. Gentlemen either now or formerly connected with the hospital or medical school who may through inadvertence not have received special notice and who desire to be present are requested to communicate with the Dean at the Royal Dental Hospital, 32, Leicester-square, London.

THE LANCET.

LONDON: SATURDAY, OCTOBER 30, 1909.

Recent Advances in our Knowledge of Sleeping Sickness.

WE published last week an admirable address on the Recent Advances in our Knowledge of Sleeping Sickness, which was delivered before the Society of Tropical Medicine and Hygiene by Dr. ARTHUR G. BAGSHAWE, Director of the Sleeping Sickness Bureau of the Royal Society. In that address Dr. BAGSHAWE carefully limited himself to the consideration of work done during the past 12 months, especially such as had an immediate bearing upon prevention or cure, and his practical remarks on the administration of the arsanilates enable us to form a better idea than we have had before of the fatality of the disease.

We have now received the report of the German Commission on Sleeping Sickness,[1] appointed in 1906 to proceed to East Africa with a subsidy from Imperial funds to cover the cost of the expedition. This report may well be considered in connexion with Dr. BAGSHAWE'S address, to which it supplies a very interesting background. Professor R. KOCH, who had already had previous acquaintance with the disease while engaged in other work in Africa, was chosen as leader of the expedition, and with him were associated two colleagues—Professor KLEINE, of the Royal Prussian Institute for Infectious Diseases at Berlin, and Staff-Surgeon KUDICKE, of the East African Protectorate troops. Later, Professor BECK, of the German Imperial Health Department, was added to the Commission, as also was Dr. PANSE, of the German East African Government Medical Service. The expedition arrived in Africa in May, 1906, and returned to Europe in October, 1907. Before completion of the work Dr. PANSE at his own request left the Commission, and we regret to state that he died shortly afterwards. During the time, about two years, which had necessarily to be spent in preparing for publication the material collected by the expedition considerable advances had been made in the knowledge of sleeping sickness, and many points which were in doubt at the time when the German Commission were completing their observations have since been explained fully by the researches of other experts. In spite of this the report is a most interesting and valuable work; the investigations were carried out with characteristic diligence and zeal and with close attention to scientific details. The volume is profusely illustrated and contains about 100 reproduced photographs (most of which were taken by Professor KLEINE), several maps, coloured plates, and a considerable number of charts. It deals separately with the etiology of the disease, its diagnosis, clinical features, treatment, and prophylaxis. In the preface Professor KOCH disclaims any idea of the book being regarded as a monograph on sleeping sickness. Some important points, indeed, have not been dealt with, since the Commission, as is stated, had no special opportunities for inquiring into them. A part of the time of the expedition was spent in the study of the disease in British territory, more particularly in Uganda. Some of the islands in the great Victoria Nyanza afforded exceptionally favourable conditions for carrying out etiological investigations. On some of the smaller uninhabited islands of the Sese group it appears that although human beings are entirely absent, yet there are plenty of water-fowl, crocodiles, lizards, and snakes. Glossina palpalis is also present in overwhelming numbers. As no human blood is available for the food of the female insects it was expected that the glossinæ would seek their nourishment by biting the wild birds. But, contrary to expectation, it was found that the blood which was present in the stomach and intestines of captured glossinæ was almost invariably that of crocodiles, and in this blood in some instances trypanosomes were found. The latter were of four types, none of which, however, closely resembled the trypanosoma gambiense. Occasionally on careful examination trypanosomes were found in the salivary glands of the insects, and this circumstance was regarded as supporting the view that a developmental cycle of the parasite had taken place in the body of the glossina. To answer the question whether or not man was the only host of the trypanosoma gambiense, many other animals were examined, including cattle, goats, sheep, dogs, monkeys, wild pigs, hippopotami, and antelopes. Most of these animals are found on the shores of the Victoria Nyanza and most of them suffer from the onslaughts of blood-sucking flies like the glossina. In none of these animals, save in a single monkey, were any trypanosomes found by the Commission. From this observation it was concluded that these animals, excepting perhaps the monkey and the dog, were insusceptible to this form of trypanosomiasis. Large numbers of wild birds were also examined, including cormorants, herons, kingfishers, wild geese, weaver birds, and the like, but without result, except that in a rhinoceros bird some trypanosomes, not resembling the trypanosoma gambiense, were discovered. Fishes were also investigated but without finding traces of any trypanosomes in their blood. The inquiry was then extended to reptiles, including turtles, lizards, and crocodiles, and in the blood of these trypanosomes were not infrequently found. Of 12 full-grown adult crocodiles which were very carefully examined trypanosomes were discovered in four, the parasites, however, not being present in any great number. It cannot be taken as proved that these trypanosomes were related to trypanosoma gambiense, but nevertheless Professor KOCH regards these reptiles as a grave source of danger in the spread of sleeping sickness since they probably serve upon occasion as hosts for the specific parasite. Experiments to inoculate artificially young crocodiles under four years of age with the trypanosoma gambiense were entirely unsuccessful. The female crocodile lays from 60 to 70 eggs in her nest. Professor KOCH himself found 40 of these nests containing an aggregate of 2000 eggs, which he destroyed or used for scientific purposes. He recommends that the natives should be paid a reward

[1] Bericht über die Thätigkeit der zur Erforschung der Schlafkrankheit im Jahre 1906-07 nach Ostafrika entsandten Kommission, Berlin, 1909, Julius Springer.

for seeking out these nests and for destroying the eggs and that the carcasses of lambs or kids into which arsenic had been put should be used as poisoned baits to kill the adult crocodiles. It is concluded that the glossina prefers human blood for its food, but when that is not available it falls back upon the blood of the crocodile for its nourishment, at least in the region of the Victoria Nyanza.

Other measures recommended by the German Commission are already familiar to our readers, including the cutting down of bushes and undergrowth close to the banks of streams and lakes to destroy the haunts of the glossina, particularly in the vicinity of fords, ferries, and places from which the natives draw water. The collecting of rubber in these regions should be suspended according to the German Commission, and boating and fishing on the Victoria Nyanza should be forbidden to the natives for the present; the villages should be removed from the localities infested by glossina to fly-free areas back from the lake. Early treatment by atoxyl is strongly urged by the German Commission, the dose to be repeated every tenth day, not only with the object of curing the disease, but also to keep the trypanosomes out of the circulation and thus avoid infection of fresh glossinæ. The limitations of atoxyl and soamin indicated by Dr. BAGSHAWE must here be borne in mind, for their efficacy in any but the earliest stage in the disease is doubted by Dr. BAGSHAWE as a result of the examinations of the most recent work. Early treatment requires early diagnosis of the disease, and for this purpose, after careful consideration of the value respectively of examination of gland juice, cerebro-spinal fluid, and blood, the German Commission recommends blood examination as the safest, simplest, and speediest method of arriving at a definite diagnosis, and Dr. BAGSHAWE says in so many words that the diagnosis cannot be established unless the trypanosome is found in one or other of the body fluids. To secure systematic treatment by atoxyl and for other reasons the German Commission considers it advisable to have as many sufferers as possible collected in camps located outside the fly area, and in order to prevent the spread of sleeping sickness into adjoining territories international regulations for restricting the movements of natives and establishing examination stations on the frontiers should be carried out. In this way any infected natives endeavouring to escape could be detained and transferred to a camp for treatment and observation. These are matters to which our Colonial Office must already have had its attention drawn, and they illustrate once again the fact that scientific medicine is bound to become in the future the great argument for international amity.

Hair-balls.

MASSES of hair are not very rarely found in the stomach and intestines of animals, though they are unusual in the human gastro-intestinal tract. The habit of licking the surface of the skin, so common and so salutary in many animals, is mainly responsible for these collections of hair, whose formation is also greatly facilitated by the character of the hairs of many animals which are rough on the surface from the projections of the superficial cells. When hairs such as these are rubbed or beaten together they become matted—in other words, they "felt"—for the projecting teeth interlock, and this felting process takes place much more readily with the hairs of some animals than with those of others, the difference of behaviour being entirely due to the difference in the surface of the hair. In human hair the external roughness, so apt for the production of felting, is not present, but hair-balls are occasionally found in human stomachs, and their presence must enter into the category of possibilities in making an exhaustive diagnosis. A valuable paper on this rare condition is contained in the issue of the *Journal of the American Medical Association* for August 21st, by Dr. W. W. BUTTERWORTH of New Orleans. In this article the observer records a case which was under his own care, and the details may be usefully recapitulated. The patient was a girl, eight years old. She had been sickly for the first two years of her life, but later she had been in better health, though she was pale and anæmic. Rather more than a year before her death she became very weak and had frequent vomiting, while the stools contained much mucus. For several months prior to this last illness she was known to be in the habit of eating sand, a fact which might have caused her immediate relations more anxiety if they had realised the serious omen of this sort of perverted appetite. She was taken ill with abdominal pain near the end of October, 1908, and a firm, crescent-shaped swelling in the epigastric region was found by Dr. N. W. FOUNTAIN. The temperature was 104° F., the respirations were 40, and the pulse was 148 per minute. The temperature fell after free catharsis. On the fifth day the blood showed tertian malarial organisms, and in the stools many uncinaria ova were found. She was treated with quinine and phenacetin. She was admitted into hospital a few days later, but the general condition was so bad that an exploratory incision was not considered advisable. The temperature remained between 100° and 102° F., at times she had paroxysmal abdominal pain, and she grew weaker and died on the twenty-seventh day of her illness. At the necropsy the stomach was found to contain a firm mass of hair moulded to the shape of the interior; many of the hairs of which it consisted were 15 inches long. The mucous membrane of the stomach was normal except near the pylorus, where there was a chronic ulcer one inch in diameter.

This story furnishes a good example of the symptoms produced by hair-ball in the human body, though complications in the form of malaria obscured the diagnosis. Moreover, the patient, though known to swallow sand, was not known to swallow hair. The pathological accident is much more common in girls and women than in men, and of the 42 recorded cases which Dr. BUTTERWORTH has succeeded in collecting 39 were females; this preponderance is doubtless due to the fact that girls wear their hair long and it is therefore much easier for them than it is for boys to get the ends of the hair into the mouth. The taste once acquired may persist for years, and the hair may be torn from the scalp and swallowed, but at first it is probable that only the tips of the hairs are bitten off. In the majority of cases the practice appears to commence in girlhood, and it is sometimes associated, but by no means

always, with the practice of eating sand and dirt—"pica," as it used to be called. Human hair-balls never form the compact, rounded masses which are found in cattle, for the hair has little tendency to felt. The age of the patient varies greatly, the youngest, eight years old, being the case described by Dr. BUTTERWORTH, and the oldest an insane man aged 43 years. Insanity is not commonly present, only four of the 42 cases being described as mentally unsound. The quantity of hair varies; in the case described above the mass weighed when dry 3¼ ounces; but a hair-ball removed by PAUL SWAIN, and now in the museum of the Royal College of Surgeons of England, weighed 5 pounds 3 ounces. The hair is usually little affected, even after years' exposure to the action of the gastric juice; it is probable that the alkaline pancreatic juice would speedily erode it, or even disintegrate it, for keratin is soluble in alkalies. The general health suffers very little, but eventually pain and vomiting appear. The mass of hair is rarely vomited, and only when it is quite small, but dyspepsia is very common. In a fair proportion of the cases the mass can be felt through the abdominal wall, and a correct diagnosis has in five cases been made; more commonly the swelling has been thought to be a malignant growth. The diagnosis is much facilitated if the patient is known to have, or to have had, the practice of eating hair, or if portions of hair are noticed in the stools. When a mass is found in the upper part of the abdomen of a child, especially if the patient is a girl, the idea of a hair-ball should enter the surgeon's mind. The only treatment is removal, and the operation has been very successful, only 1 dying out of 17 on whom an operation was performed. The prevention of hair-ball is probably not very difficult. Any child who shows a disposition to eat sand, or the wool of carpets, or to bite her hair, should be watched and care should be taken by means of nauseous substances smeared on or mixed with the abnormal article of diet to render it unpalatable to the child. The practice of eating sand is very liable to give rise to the presence of entozoa, and it should be checked at the earliest possible moment, and evidence of the presence of intestinal worms should be sought for and steps should be taken to remove them.

The Workmen's Compensation Act, 1906: A Year's Statistics.

THE Home Office has recently issued a Blue-book which deals with a new series of workmen's compensation statistics for 1908—this being the first complete year during which the extending Act of 1906 has been in operation. The volume is edited by Mr. MALCOLM DELEVINGNE, who in an introductory note explains that under the Acts of 1897 and 1900 statistics were published annually, but that these were limited in scope, referring to only seven of the chief groups of industries. The Workmen's Compensation Act of 1906 greatly extended the field of compensation. In the first place it includes, with few exceptions, all occupations, whether the employment is by way of manual labour, clerical work, or otherwise; secondly, it reduces from a fortnight to a week the period of disablement entitling to compensation; and thirdly, it extends compensation to injuries caused by certain industrial diseases, of which a list is appended. Mr. DELEVINGNE'S work will doubtless be valuable for official purposes to certain members of the medical profession, but the statistical tables therein contained will hardly be appreciated by general medical readers without frequent appeal to the text of the statute, or preferably to a short analysis thereof, such as that which appeared in THE LANCET of Jan. 12th, 1907. A translation into ordinary language of the Workmen's Compensation Act, giving a summary of its most important provisions and paged references to its several clauses and subsections, is required by medical practitioners who have no leisure to wade through the original statute.

By a statutory Order of the Secretary of State, dated Jan. 15th, 1908, returns are required concerning mines, quarries, railways, factories, harbours, docks, and shipping, these being the industries from which returns can most readily be obtained. But, with respect to the most important of the industries not included in the statutory Order—namely, those of building, agriculture, inland transport, sea-fishing, and domestic service—no trustworthy returns are available because of insuperable difficulties in their collection. The present volume contains (1) statistics as to compensation cases in the above-mentioned Order; and (2) general statistics respecting the administration of the Act. The statistical matter in the present work is presented in six tables. From Table I., which exhibits the general results, we learn that about seven and a half millions of persons in the aggregate are employed in the seven groups of industries above specified, and that in the year 1908 no less a sum than £2,080,672 was distributed among them in compensation for 3473 cases of death and 325,484 cases of disablement. These figures relate exclusively to compensation paid under the Act of 1906 to which the powers in Section 12 are limited. They do not include compensation paid under contracting-out schemes or under other Acts, or any costs or damages incurred at common law. The figures do not, therefore, represent the total charges upon the different industries in connexion with payment of compensation to persons employed in respect of injuries received. Speaking generally, we read that as regards the highly organised industries—such as mines, railways, shipping, and factories—the returns are substantially complete, whilst in other industries, more especially docks and works of construction, a margin of error must be allowed for. With reference to the administration of the new statute, we gather that only a small proportion of the claims thereunder became the subject of litigation in the courts. The returns show that among the compensations granted in the seven selected groups of industries only 1852 fatal cases and 2763 disablement cases were taken into court, a large number of which were either withdrawn or settled out of court. The number of fatal cases in which compensation was awarded by the courts was 750, or less than 22 per cent. of the total included in the returns; and the compensation awarded amounted to £123,579, or about 23 per cent. of that included in the returns. In 83 fatal cases and 311 disablement cases judgment was given for the respondent.

With reference to claims by domestic servants the

tables show that compensation was awarded by the courts in 33 fatal and 112 disablement cases, and that agreements for compensation were registered in respect of 61 fatal cases and 1019 cases of disablement. As regards so-called "industrial diseases," it appears that before a claim can be made respecting disablement from such disease, the workman must either have been medically certified to be suffering from and disabled by the disease, or else to have been suspended from employment under the rules of the Factory Acts on account of having contracted the disease. A table is presented summarising the returns of the certifying surgeons; it covers all the occupations to which the Act applies, and classifies the figures by the different occupations. The present volume also contains a list of 24 kinds of industrial diseases which are included under the Workmen's Compensation Act. During 1908 compensation was paid in 26 cases of death and in 2260 cases of disablement. Of these cases 1550 occurred in the mining industry; of which 386 were cases of nystagmus, 6 of ankylostomiasis, 459 of beat-hand, 537 of beat-knee, 67 of beat-elbow, and 87 of inflammation of the synovial membrane of the wrist-joint and tendon sheaths. Of the remaining cases lead poisoning accounts for 421, anthrax for 23, arsenic poisoning for 15, chrome poisoning for 20, and compressed-air illness for 10. No cases were returned of poisoning by carbon bisulphide, by nitrous fumes, by nickel carbonyl, or by African boxwood, nor was glanders returned as a cause of death or of disablement. Although 117 cases of lead poisoning among workers in earthenware were reported under the Factory Acts, only 100 of these were compensated during the year. A probable explanation of this discrepancy is this: that a worker suffering from lead poisoning is not necessarily entirely disabled, for in many works other employment is found for such workers, and so the mischief is stayed. Again, it is stated that although 32 cases of anthrax were reported by the factory inspectors in 1908, only 15 of these were compensated during the year. Possibly this arises from the circumstance that under the earlier Acts anthrax was held by the courts to be an injury by accident; accordingly some cases of that disease may now have been included among the accidents instead of among the diseases, as they should have been.

The section relating to medical referees appears to be one of considerable importance in view of their new relations to the question of compensation as between employers and employed. For the purposes of the Workmen's Compensation Act the number of medical referees appointed up to the end of 1908 was 344, of which 215 were for England, 83 for Scotland, and 46 for Ireland. The principal duties of a medical referee under the Act are as follows: (*a*) To report in cases referred to him by a judge, or by an arbitrator or committee; (*b*) to certify as to the condition of a workman and his fitness for employment, or as to his permanent incapacity for work; (*c*) to sit as medical assessor to a judge when required so to do; and (*d*) to decide, on appeal, against the decision of a certifying surgeon, who gives, or refuses to give, a certificate of disablement on account of industrial disease. From a series of tables relating to services rendered by medical referees we learn that 272 references were made during the year, of which 136 were made by judges, 43 by arbitrators, and 93 by committees. 35 appeals to medical referees took place against the decision of certifying surgeons, in 20 of which the decision was confirmed, and in 15 it was upset by the referee.

Annotations.

"Ne quid nimis."

THE CALENDAR OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE edition of the Calendar of the Royal College of Surgeons of England which has just been published contains some new features. A list of those who have given or bequeathed sums of money to the College is now included in the Calendar. The earliest sum mentioned is that which was paid to the Company of Barbers and Surgeons by Mr. Edward Arris in the year 1646 "for the use of the new publique anatomy." Upon the dissolution of the Barbers and Surgeons in 1745 by an Act of Parliament the Barbers were allowed to retain the whole of the corporate property, with the exception of the Arris bequest and Gale's Annuity (the latter being founded in 1655), which trusts the Act vested in the Company of Surgeons. Coming to much more modern times, it is noted that a contingent bequest of a sum of about £5000 was to become payable to the College on the death of a lady for whom the late Sir Erasmus Wilson provided an annuity. This lady has died recently and steps are being taken regarding the payment of the money to the College, but whether these steps are successful or no, the famous dermatologist will be one of the greatest benefactors of the College over which he presided, for his bequests to it, which fell in at Lady Wilson's death, amounted to some £200,000. Altogether, excluding the three sums voted by Parliament at various times, the donors and benefactors to the College number 14. Lists of the masters of the Company of Surgeons and of the members of the Court of Assistants and of the Court of Examiners from 1745 to 1800 are now included in the Calendar for the first time. The number of Fellows of the College now amounts to 1457, which number includes 1415 by examination, 28 elected as Members of 20 years' standing, 13 "by election," and 1 "elected" *ad eundem*. The oldest Fellow is Mr. G. Carrick Steet, who was formerly chief medical officer at the General Post Office. The list of Members contains 16,957 names. The "father" of the Members of the College appears to be Surgeon-Major H. B. Hinton, late of the Bengal Medical Staff, who resides in Glenelg, South Australia, and who, in a recent letter to the secretary of the College, says: "I was born at Portsmouth on March 7th, 1813, and being at the present time in perfect health, walking for pleasure five miles or more a day, am ambitious of living to be one hundred," an ambition of which we hope to record the fulfilment.

THE BUDGET AND THE DRUG INDUSTRY.

WE referred a short time ago to the influence which the new taxes upon alcohol would exercise upon the drug industry and so upon the general practitioner who makes up his own medicines and upon hospitals and dispensaries. A notable object lesson is afforded by a price-list of one of the largest metropolitan druggists which is now before us, a list containing alterations in prices since the publication of the firm's general price-list in July. From this list we note that apparently all preparations of which alcohol forms a part, or in the preparation of which alcohol is used, have advanced

in price. Thus absolute alcohol has gone up from 4*s*. 4*d*. per pound to 5*s*. 5*d*., all the concentrated "aquæ" have advanced by 6*d*. or 9*d*. per pound and of course all the tinctures; the extracts also, with the exception of the watery extracts, have advanced from 3*d*. to 6*d*. per pound. It is easy to see how this advance will press hardly upon medical men and hospitals. And the medical men who will be most affected are not, be it said, men with good town practices and Cabinet Ministers for their patients, but that hard-working class of practitioners who have large contract practices and whose patients belong to the poorer section of society. This alcohol tax, too, does not touch the drinker or the publican, neither is it simply an increase of 3*s*. 9*d*. per gallon, but one of 6*s*. or 7*s*., for the alcohol used in the preparation of tinctures and the like is of 60 per cent., 70 per cent., or 90 per cent. of strength, and not ordinary proof spirit. This point was one which appealed strongly to the late Member of Parliament for Bermondsey, Mr. George J. Cooper. The manufacturer naturally recoups himself by increasing his charges to the consumer—i.e., to the medical man in a very large number of cases, but the medical man cannot as a rule increase his fees, especially in the case of club practice. Some clubs pay for their own drugs, and these clubs will feel the pinch very keenly, but it is unlikely that this fact will move the managements of other clubs to raise the salaries of their medical officers.

THE HAND AND ITS CUNNING.

PERHAPS some people would be embarrassed for a moment if they were asked to describe the ideals which led to the creation of a Philomathic Society, or at least until they had had time to reflect that the word "Mathematics" signified to the Greek in the first instance the whole field of learning. It is then only fitting that a society banded together by its common love of learning should now and then bid as the chief guest to its yearly banquet a distinguished exponent of medical knowledge. When the Liverpool Philomathic Society invited Sir Frederick Treves last week to the chair of honour it paid its homage to art no less than to science, and their guest, whose art has been shown with pen as well as scalpel, devoted his address to the praise of handicraft and in some measure to a lament for its decline amongst men. He reminded his audience that the surgeon is above all the man who uses his hands, and after asking whether mankind is, as a whole, losing that wonderful function he felt constrained to answer Yes. In spinning, weaving, sewing, carving, writing, countless human hands have been for ages employed, with the result that works of surpassing excellence and variety have been produced. None will deny that the advance of handicraft since the days when it was confined to the shaping of flints and the preparation of hides for garments has been so amazing as almost to stagger contemplation. But, says Sir Frederick Treves, with the perfection of mechanical skill the zenith of human handicraft has been passed. We are losing as a race the capacity for the finer movements of the fingers now that the loom, the sewing-machine, and the typewriter have reduced the products of a million hands into a soulless level of uniformity. Many instances present themselves to support the thesis. Metal, instead of being wrought, is cast in moulds, furniture is decorated by stamping-machines, the camera and the electric bath have well-nigh killed the engraver's art, and if there still be such craftsmen amongst us as were at once the wonder and the glory of the Middle Ages, their hands find no similar expression for their capacities, for there is only here and there a purchaser for slow-wrought and therefore costly wares. Sir Frederick Treves sighed for the day of hand-made lace and hand-made boots, and every book-lover will join with him in his eulogy of the crafts of paper-making and bookbinding when carried on by hand. From his own profession he drew a striking instance of how the progress of invention may trend towards the decline of handicraft. He could imagine few phases of activity more difficult or more subtle than that displayed by the facile operator in the pre-anæsthetic days. Now there is no call to be brilliant, for the surgeon can proceed with easy deliberation, and "in place of the flashing of a blade is an action as studied as a movement on a chess board." (We quote from the report of his speech in the *Liverpool Courier*.) He acknowledged that surgery has gained more than it has lost, but thought that nevertheless it no longer attains to its former perfection as a handicraft. We cannot wholly endorse Sir Frederick Treves's view here. The modern surgeon is called upon to perform manipulations in the depths of the abdomen, the pelvis, and even in the brain itself that never tried the hand and eye of the dexterous men whose exploits of amputation or lithotomy were timed by the second-hand of the watch. And in any general indictment of machinery it must be remembered that the machine may be regarded as the extension of the human hand called into existence by the exercise of the highest faculties of the brain. But we agree with much of Sir Frederick Treves's lament. The hand-made thing is almost always an honest thing, being what it professes to be, and often possessing a character and beauty that no machine can ever imitate because it depends upon a human individuality. On the other side, art will never perish from the world, even though it be less and less applied in common craftsmanship. When, for instance, China has "occidentalised" herself her artists will doubtless desist from the carving of concentric hollow spheres in patterns of bewildering intricacy and will turn to more fruitful occupations, but we cannot think that the cunning spirit made manifest in the ivory will fail to find new expression amongst the people who gave it birth. Rather we believe that men of the crafts which have produced lovely things for many centuries will find the artistic energy that directed their fingers passing into new forms of usefulness and beauty.

ORGANO-THERAPY IN ADDISON'S DISEASE.

IT is a curious fact, for which no explanation has been given, that while organo-therapy has been perfectly successful in myxœdema, in no other disease supposed to be due to failure of an internal secretion has it given a similar result. The evidence of its value is unsatisfactory. This fact is well illustrated by the adrenal in treatment of Addison's disease, which has proved disappointing. However, a few cases have been recorded in which the disease seems to have been cured. At a meeting of the Académie de Médecine of Paris on Oct. 5th M. E. Boinet read an important paper on the organo-therapy of Addison's disease and reported 8 cases in which he had adopted it, with the following results: 1 case of cure, 3 cases of considerable improvement, and 4 cases of failure. In the first case a pedlar, aged 34 years, was seen in April, 1898, with all the classical symptoms of Addison's disease. There were characteristic marked melanodermia and brown spots on the internal surface of the lips and cheeks, on the gums, on the palate, and on the tongue. The patient was very feeble and was fatigued even when at rest. He was very wasted, weighing only 60 kilogrammes. Organotherapy was at once begun and consisted in the daily ingestion of two fresh suprarenal capsules of the sheep and in the subcutaneous injection of a glycerine extract of the suprarenal capsules of the calf, at first every fourth day, then every second day. In order to obtain a more rapid result the patient tripled and even quadrupled the dose. This was followed by tremors, a result which M. Boinet

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has shown to be due to overdose of adrenalin. At the end of six weeks nervous troubles appeared, and there was continuous tremor, increased by movement and most marked in the upper limbs, particularly in the hands. In November, 1899, 120 injections had been given and there was considerable diminution of all the symptoms. The improvement continued, and now, at the end of 10 years, the melanodermia is scarcely perceptible and the spots in the mouth have almost disappeared. The patient weighs 100 kilogrammes and can walk all day without fatigue. Béclère has recorded a very similar case. The patient was a man, aged 24 years, who had suffered for 15 months from typical Addison's disease, which was progressing rapidly. He ingested daily four suprarenal capsules of the sheep weighing from 10 to 15 grammes. A month later 1 cubic centimetre of the glycerine extract of the suprarenal capsules of the calf was injected daily. After four and a half months' treatment he had gained 10 kilogrammes in weight and had almost completely recovered. Now, 11 years later, he is in good health. M. Boinet suggests that in such cases the adrenalin causes hypertrophy of portions of the suprarenal capsules which have remained sound. It sounds to us more probable that by supplying the deficient internal secretion it improves the health of the patient and allows the *vis medicatrix naturæ* to produce the hypertrophy. In one of the cases of improvement reported by M. Boinet the patient was a woman, aged 66 years, with the characteristic pigmentation of the skin and mouth. She was very weak and was fatigued by the slightest effort, and suffered from lumbar pain and gastro-intestinal troubles. She took by the mouth daily extract of the suprarenal capsules of the calf. After some months she had almost completely recovered from the weakness, but the pigmentation was unchanged, and she also had tremor of the fingers. She still remains in this state nine years after the commencement of the treatment. In the other cases of improvement the result was similar. In the cases of failure some temporary improvement was obtained, but symptoms of acute suprarenal insufficiency eventually supervened and rapidly proved fatal. M. Boinet has described under the name of "Addisonism" a group of symptoms consisting of pigmentation and debility falling short of those of Addison's disease due to suprarenal inadequacy. They are not uncommon in pulmonary tuberculosis, thus differing from true Addison's disease, which is a primary tuberculosis of the suprarenal capsules. In this condition the suprarenal capsules are sclerosed, but not completely destroyed. Suprarenal treatment is very successful. M. Boinet therefore suggests that the cases of recovery from the symptoms of Addison's disease under adrenalin may be cases of "Addisonism" and not of true Addison's disease.

THE PATHOLOGICAL ANATOMY OF MONGOLIAN IDIOCY.

THE pathology of this common form of imbecility is still not clearly determined. While some consider it due to an agenesis of the nervous centres, others think the maldevelopment is secondary to the ordinary processes of meningitis or chronic meningo-encephalitis. In the *Archives de Médecine des Enfants* for July will be found a carefully described examination of the central nervous system of a case of the disease by Dr. Babonneix, working in the laboratory of Professor Raymond in Paris. The child, who presented the usual anatomical stigmata, and in addition had symmetrical syndactyly of the middle toes and double cryptorchidia, died at the age of five years from tuberculosis. The convolutions of the brain were simple and the fissures shallow, but no obvious anomaly was otherwise visible. The pia was thickened and somewhat adherent, but it could be stripped without decortication. Scattered irregularly over the surface of the brain were small areas of meningitis, with unmistakeable vascular alterations in the shape of dilatation of vessels, interstitial hæmorrhagic foci, and peri- or paravascular inflammatory nodules. Microscopical investigation of the cortex showed that in some places it was sclerosed and demyelinised, while the cellular elements were often rarefied, sometimes disarranged, staining badly, and exhibiting granulation of the protoplasm. Many nerve cells were seen embedded in the white matter. The systems of tangential fibres had almost entirely disappeared. The cortical neuroglia was intensified and unusually rich in spider cells. Throughout the brain the blood-vessels were congested, with dilatation of the perivascular sheaths; deposits of pigment were seen frequently in their neighbourhood. In the lower nervous centres only minimal changes were observed. The pyramidal tracts were agenetic. From a correlation of the work of others Dr. Babonneix considers the view incontestable that the agenesis of the nervous centres is secondary to a process of chronic meningitis. The nature of this meningitis remains *sub judice*.

THE OPENING OF THE ROYAL EDWARD INSTITUTE AT MONTREAL.

ON Oct. 21st the Royal Edward Institute, which has been erected at Montreal for the study and treatment of tuberculous disease, was opened by the King, who was at the time four and a half thousand miles away. The ceremony consisted in the hoisting of the Royal Standard, the opening of the main doors of the institute, and the switching on of its lights, the necessary machinery being set in motion by a weak electric current transmitted across the Atlantic from Chichester, where His Majesty completed the circuit at West Dean Park. He pressed the necessary button at 9 o'clock P.M. Greenwich time, and within a second the ceremony had been performed at Montreal, the time there being 4 P.M. Sir Charles Fitzpatrick, Deputy Governor of Canada, attended the ceremony in the unavoidable absence of Lord Grey, and addressed a large and brilliant assembly who also heard speeches from Sir George Drummond, chairman of the institute, and Dr. R. W. Philip of Edinburgh, its designer. The King telegraphed the following message to the chairman immediately after the opening had taken place:—

"I have much pleasure in declaring the Royal Edward Institute, Montreal, now open. The means by which I make this declaration testifies to the power of modern science, and I am confident that the future history of the institute will afford an equally strong testimony to the beneficent results of that power when applied to the conquest of disease and the relief of human suffering. I shall always take a lively interest in the institute, and I pray that the blessing of the Almighty may rest upon all those who work in and for it, and also upon those for whom it works.

EDWARD R. AND I."

THE DIAGNOSIS OF TUBERCULOUS MEDIASTINAL GLANDS.

WE published in our columns last week a note by Dr. John Allan on the importance of the early recognition of tuberculous mediastinal glands. The possibility of latent pulmonary tuberculosis in children is now generally recognised. The etiology has been further explained by researches which prove that the pathogenic bacilli may pass through the walls of the healthy intestine and become lodged in the mediastinal glands, so that infection through milk from a tuberculous cow may thus take place. Dr. Allan points out that in the study of latent pulmonary tuberculosis we are confronted with a difficult problem, and many points have to be carefully considered in the endeavours to deal correctly with it. He deals mainly with

the diagnosis. The symptoms are numerous and often vague; loss of weight, anæmia, afternoon fever, and cough are the commonest, likely to mislead if occurring singly, but of much significance when combined. The physical signs in some instances may be obvious, but in the majority of cases are ill-defined. By a careful study of these points a presumptive diagnosis may often be arrived at. Dr. Allan then draws attention to the auxiliary methods of diagnosis, which may be of the greatest aid, but unfortunately require, for the most part, the assistance of a colleague in the laboratory or an X ray installation. The value of the Roentgen rays in diagnosis has been much disputed. Dr. C. W. Cunnington has pointed out that in the "right oblique" position an excellent view may be obtained of the posterior mediastinum, which appears as a triangular light space, which in health is clear and becomes markedly luminous on deep inspiration. He finds that when the retro-cardiac glands are enlarged the space remains dark and is of opinion that children presenting this condition should be considered tuberculous. French authorities have long recognised the possibility of such early diagnosis, and institutions for tuberculous, or "tuberculous-prone," children are more numerous in France than sanatoriums for adults.

THE LATE OUTBREAK OF CHOLERA IN THE PRESIDENCY GENERAL HOSPITAL, CALCUTTA.

THE Lieutenant-Governor of Bengal, as we announced last week in a leading article, has issued an official report describing the outbreak of cholera which occurred in the Presidency General Hospital, Calcutta, in July last, and embodying the results of bacteriological examinations carried out by Professor Haffkine. The first case, that of one of the nursing staff, occurred on the morning of July 30th, and was followed by ten other cases during the day and on the subsequent day. Six deaths resulted among the nursing staff, the other fatal cases being those of three children, who were in-patients of the hospital, and a native sweeper. All the cases occurred within 30 hours of the first, and so virulent was the infection that, although treatment was adopted immediately, death followed in the fatal cases within 24 hours from the first symptoms. No case occurred after midday on July 31st and the epidemic stopped as suddenly as it began. Careful investigations showed that those affected all partook of the evening dinner on July 28th and that the infection was carried in some article of food supplied at this meal, probably a custard served with stewed fruit, of which they had all eaten. On July 31st Professor Haffkine isolated comma bacilli in pure culture from the stools of five of the patients, thus eliminating the possibility of ptomaine poisoning, which was at first suspected. He also took 127 samples of food and water, and on bacteriological examination 14 were found infected with comma bacilli. The uniformity of infection led him to suspect the kitchen servants as possible sources of the infection, and of 12 servants examined two *masalchies* (natives who wash up dishes, plates, &c.) employed in the nurses' kitchen yielded positive results, comma bacilli being actually found on their hands. One of these just before examination had visited the latrine and washed at the place set apart for servants. This circumstance suggests that the men, or some of them, were actually harbouring comma bacilli and acting as "carriers," as has been proved to be the case in enteric fever. Contaminations could be conveyed from their hands to the dishes and in this way to the dining room. Professor Haffkine segregated these men and examined their excreta, finding comma bacilli, of which he is still engaged in working out the cultural properties. If the custard was inoculated in the morning with comma bacilli and allowed to stand at the temperature of a July day in Calcutta it would present a teeming mass of virulent bacilli before evening time, when it was partaken of by those who contracted the disease; and the incident serves as a most tragic illustration of the dangers run by tropical residents whose servants exhibit any uncleanliness in the preparation of their food. It also seems to prove beyond dispute the dangerous existence of cholera "carriers."

ISOLATED FRACTURE OF THE TRANSVERSE PROCESS OF A LUMBAR VERTEBRA.

OF the exact pathology of the condition termed sprain of the back little is known, and its diagnosis from lumbago, which, as is well known, may be of very sudden onset, is sometimes difficult. The X rays have recently thrown some light on this injury and, as in other regions, have revealed the existence of fractures previously unsuspected. In March, 1908, Ehrlich described what he thought was the first case of isolated fracture of the transverse process of a lumbar vertebra which had been diagnosed during life.[1] Three cases in which this injury was found post mortem had previously been recorded. In December Haglund added seven other cases.[2] In all these cases the diagnosis was made by means of the X rays. In the *New York Medical Journal* of Oct. 9th Dr. S. Lange, radiographer to the Cincinnati Hospital, has reported two other cases. In the first the patient was a muscular man, aged 50 years, who said that four months previously, while lifting a heavy tray out of a trunk, he felt something give way in the small of the back. Great pain followed and he had to cease work. Next morning, while bending over the washstand, he felt excruciating pain in the same place and fell to the floor, from which he could not rise for a few minutes. Since that time he had been unable to follow his occupation of commercial traveller because of the pain, which was especially marked on stooping, riding on cars, and walking fast. At night, when in bed, he occasionally felt twinges of pain. On examination all that could be found was an area of acute tenderness of about the size of a dollar to the left of the last lumbar vertebra in the angle between the crest of the ilium and the spine. To this spot the patient referred all his pain. It resisted all the usual methods of treatment, including rest in bed, strapping, salicylates, and potassium iodide. The X rays revealed a fracture of the left transverse process of the fifth lumbar vertebra. The process was tilted up at an angle and an irregular fissure separated its tip from its base. Some union of the fragments seemed to have occurred. It appeared that the patient's powerful erector spinæ in contracting broke the transverse process. In the second case a man, aged 35 years, was admitted to hospital complaining of severe pain in the right lumbar region, which began two days previously after a sharp blow in the small of the back from a heavy, rapidly revolving crank-handle. Examination showed rigidity of the lumbar muscles on the right side and great tenderness on pressure to the right of the first lumbar vertebra. Skiagraphy revealed a fracture of the right transverse process of the first lumbar vertebra, with upward displacement of the fragment. The causes of the fracture in the cases reported by Haglund are instructive. In one case a coal bucket fell upon the lumbar spine; in two the back was "sprained" while riding a bicycle; in a third instance a man sprained his back whilst lifting his son; another fell downstairs; and the last patient was an athlete who had many times fallen on his back but could not say which fall had caused the fracture. Before the application of radiography to this class of injuries these fractures must have been diagnosed as sprains. The diagnosis

[1] Deutsche Zeitschrift für Chirurgie, Band xcii., p. 413.
[2] Ibid., Band cxvi., p. 321.

may be based upon the history of the accident, tenderness on pressure over the seat of fracture, slight muscular rigidity, and pain of varying severity, which is increased by movements of the trunk, especially walking and stooping, and relieved by lying down. If the case is seen late the diagnosis can be made only by radiography. The diagnosis is of medico-legal importance, for in many obscure cases claims for compensation are made for injuries to the back. In the past objective signs could not be found in cases of this fracture, but now radiography may prove useful.

THE REMUNERATION OF MEDICAL MEN SUMMONED ON THE ADVICE OF MIDWIVES.

IT will be remembered that the recommendations of the Departmental Committee appointed by the Lord President of the Privy Council to consider the working of the Midwives Act, 1902, are as follows:—

> A secure expectation of payment should be given to a medical practitioner summoned on the advice of a midwife in a case of emergency. The Poor-law authority should be responsible for the payment and should be empowered to charge the fee paid as "relief on loan" to the patient. The scale of fees should be fixed by order of the Local Government Board on a systematic basis, having due regard to local conditions. In emergency cases the system of a uniform fee, which should cover any ordinary after-attendance, is recommended for adoption, with the addition, perhaps, in scattered rural areas, of some allowance for mileage. The medical practitioner, in applying to the public authority, should be required to state that he has been unable to obtain payment of his fee from the patient or her representatives. A list of practitioners willing to respond to a midwife's call should be prepared and circulated in every area. .....

The Council of the London and Counties Medical Protection Society has just approved the following recommendation of its Midwives Committee:—

> That having regard to the proposed payment by boards of guardians of the doctors called in to assist midwives, the London and Counties Medical Protection Society recommends the medical men in each union to meet and confer on the subject, and to agree as to what fee or fees they will accept, and then combine to insist on such fee or fees being paid (or guaranteed) by the guardians, and paid on the statement of the medical man that he is unable to obtain payment of his fee from the patient or her representatives.

DISEASE OF THE PITUITARY AREA AND CHANGES IN BODILY NUTRITION AND DEVELOPMENT.

RECENT studies, based on a consideration of clinical and pathological material, of the question of the relation of disease of the pituitary gland and its appendages to disturbances of bodily nutrition, arrest of bodily development, defective appearance or absence of secondary sexual characteristics, and so on, have served to show that the subject is a highly complex one, and its complexity seems to increase with advancing knowledge. The inter-relation of the various ductless glands and their coöperative function in the bodily economy are matters which are far from being fully elucidated. The well recognised and familiar condition known as acromegaly, in which the extremities in particular are overgrown, is frequently associated with tumours of the hypophysis, but not necessarily so. Some cases of that disease are sexually infantile, and in them secondary sexual characteristics are undeveloped. Loss of sexual appetite is apparently a symptom of early establishment in pituitary disease, though it is common in many intracranial growths. Further, there is a well-differentiated type of somatic and sometimes mental infantilism in which the body becomes fat, pubic and axillary hair does not grow, the testicles remain atrophic (degeneratio adiposo-sexualis), and this type is associated with pituitary disease—it is supposed defective function of the anterior lobe. In some cases of gigantism—a condition distinct from acromegaly—disease in the region of the sella turcica has been found. In the skeleton of the Irish giant Magrath, described by the late Professor Cunningham, the cranio-pharyngeal canal is patent. Some giants are also sexually infantile. Cases of "feminism," where the male takes on the secondary sexual characteristics of the female, have sometimes been associated with bitemporal hemianopia and primary optic atrophy—indications of disease in the pituitary neighbourhood. It is evident we have not as yet reached the stage at which a pathological diagnosis can be made with certainty. In the *Wiener Klinische Wochenschrift* of April 29th Dr. Formanek describes the case of a girl, aged 18 years, who from early childhood had been backward physically and mentally; her bones were thin and small, the mammæ were undeveloped, and she had never menstruated. When she came under observation she complained of headache and inordinate sleepiness. Apparently no definite sign of intracranial disease was discovered. There is no mention, however, of the visual fields. Under observation she became steadily weaker, mentally and physically, and began to lose weight in a remarkable way. Just before her death, some months later, her weight was only 42 pounds. At the necropsy a cystic tumour was found growing from the base of the skull, impinging on the third ventricle, and bounded anteriorly by the chiasma, posteriorly by the cerebral peduncles, and laterally by the temporal lobes. The clinoid processes of the sella turcica were flattened, but the pituitary body itself was of normal size and in its normal position. The tumour was a squamous-celled epithelioma and grew from the epithelium lining what had been the duct from the pharynx to the hypophysis. In other words, it was of ectodermic origin, springing from the "rest" of that part of the stomatodæum of the embryo which passes upwards and backwards to the base of the skull. The ovaries and the genitalia were infantile. The interest of the case is obvious, but it leaves many problems as far from solution as before.

THE NORFOLK AND NORWICH HOSPITAL.

EXCELLENT work has been done by the physicians and surgeons of the ancient city that will always be honoured as the birthplace of Sir Thomas Browne, and the present practitioners in Norwich live up to their great traditions. Here for 140 years Norfolk has had its county hospital, the existence of which has been of the utmost benefit to medicine no less than to the sick poor of a wide area, and this institution has enjoyed the special patronage of the King and Queen since Their Majesties, when Prince and Princess of Wales, became residents in the easternmost county. His Majesty laid the foundation-stone of the present buildings 30 years ago, and visited the buildings in 1884, the year after they were opened by the Duke and Duchess of Connaught. Since that time the work of the hospital has greatly increased, there being at present over 200 beds available for occupation. In 1907 the honorary medical staff prepared at the request of the board of management a report setting forth the additions and improvements which they considered necessary for the maintenance of the hospital at a proper level of efficiency for modern treatment, and just a year ago this scheme was presented to the general board of management, showing that the improvements chiefly needed were as follows: the provision of new isolation and septic blocks, the present accommodation for infective cases being in the oldest part of the building and quite inadequate; new operating theatres; alterations in the out-patient and casualty departments; and additional quarters for the nurses and ward-maids. With some smaller requirements the estimated cost of these improvements was nearly £44,000, and the governing body, which is only able to meet current expenses with the help of legacies, recommended that no part of the work should be undertaken unless an endowment was forthcoming at least equal to the cost of building that part. A vigorous appeal during the past year has resulted in

sufficient funds being raised to satisfy this condition so far as concerns the isolation and septic blocks, which together will cost some £5600. The interest of the King was aroused in the scheme, and on Oct. 25th His Majesty visited Norwich, where he was received in state by the city fathers in their old St. Andrew's Hall, and was acclaimed with the utmost heartiness during his drive through the city. After reviewing and presenting colours to the Norfolk Regiments and the Royal Norfolk Yeomanry, he proceeded to the Norfolk and Norwich Hospital, where he was received by the Earl of Leicester, its president, who at the close of a religious service presented him with a loyal address of welcome. In replying, the King paid a warm tribute to the memory of the late Lord Leicester, and expressed his gratification at being able to inaugurate the necessary extension of the hospital, the needs of which he commended to the support of the charitable. He concluded with these words: "The encouragement you give to your nurses to join the Nursing Service of the Territorial Forces meets with my most cordial approval. In matters of life and death the services of the trained nurse are no less essential than those of the physician or surgeon. I pray that the blessing of God may rest upon your labours." The foundation-stone was then "well and truly laid" by His Majesty, who took his leave after a benediction had been pronounced by the Bishop of Thetford. We trust that the work begun under such fortunate auspices may not be hampered for lack of further funds, the more especially as there has been a suggestion of forming an adequate ophthalmic department by amalgamation with the Norfolk Eye Infirmary, which, if carried out, may necessitate an expenditure considerably beyond the present estimates.

THE DANGER OF FAST DRIVING.

THE sentence of eight months' hard labour recently passed upon Arthur Saytch at Devizes by Mr. Justice Phillimore cannot be regarded as undeserved. It is not necessary to describe the manner in which he drove into the rear ranks of a battery of Territorial artillery on the march in the early morning on Salisbury Plain, killing one and injuring others, as the inquest, the hearing before the magistrates, and the trial have been fully reported. It is satisfactory that conviction should have followed upon the proceedings taken by the Treasury, for a coroner's jury had failed to find a verdict of manslaughter, and acquittal might have given rise to the feeling that the action rightly taken on behalf of the Crown was oppressive and vindictive. Other drivers of motor-cars will do well to consider the futile nature of the excuses raised in his own defence by the prisoner, of which the most plausible no doubt was that he drove suddenly into thick mist which prevented him from seeing the soldiers in front of him in time to pull up. All motorists are aware of the almost amazing rapidity with which a motor-car in good order can be stopped in favourable circumstances, and those who do not drive motor-cars will not contradict them. What motorists, however, apparently fail to realise is that the human as well as the mechanical element in the operations necessary to stop a motor-car have to combine in the consecutive performance of their functions in a space of time which leaves no margin for the correction of errors. The motor-car which is being driven without infringing the letter of the law as to speed at the rate of 20 miles an hour traverses, roughly speaking, 10 yards in a second, and consequently the driver who first comes in sight of an obstacle when it is at a distance of 10 yards approaches 2 yards nearer to it in every fifth part of a second occupied in appreciating the situation, in making up his mind what is to be done, and in performing the physical acts necessary before any diminution of speed commences. Similar considerations apply to foot passengers, and at the recent inquest upon an elderly retired naval officer, who was run over at the bottom of Regent-street, it was made apparent that there was no excessive or dangerous speed on the part of the vehicle which caused his death, but that the accident was due to momentary hesitation on his part. There was time for him to have passed into safety, but there was none in which to correct an error once made. Subways are sometimes suggested as a preventive of street accidents of this kind, but it is doubtful whether they would be of great practical utility, even though they were to be adopted on a large scale. The young and active would not welcome the delay and extra trouble entailed by using them, and the descent and ascent of flights of stairs are irksome to the elderly and infirm; whereas young and old alike have a perfect right to use the highway and to have their safety considered by those driving along it. The punishment of those whose want of such consideration is proved against them should act as a warning to reckless and callous persons. A considerable, and indeed extraordinary, increase of street accidents within the metropolitan area due to vehicles of all kinds is recorded, and it will be interesting to observe whether they diminish or not during future years, as drivers and pedestrians alike become accustomed to the new conditions under which an augmented and accelerated vehicular traffic is conducted.

THE FRANCO-BRITISH EXHIBITION AND KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE honorary secretaries of King Edward's Hospital Fund for London have received a cheque for £4775 from Sir Charles Hardinge, together with a letter, in the course of which he states: "According to Clause VIII. of the Articles of Association of the Franco-British Exhibition, Incorporated, any surplus remaining after the liquidation of that association is to be devoted to some public object or objects, charitable or otherwise, to be determined by the Secretary of State for Foreign Affairs for the time being, and the Minister whom the association shall select as holding similar office in the French Government for the time being. A cheque for £4775 has been forwarded to the French Ambassador, and I am now directed by Secretary Sir E. Grey to transmit to you herewith a cheque for a similar sum, representing the other moiety of the present available surplus, which the Secretary of State desires to place at the disposal of King Edward's Hospital Fund for distribution to British hospitals in London."

OCCUPATION NEUROSES.

THE statement that nervous disease is on the increase has become somewhat of a commonplace, although a distinction is not always properly drawn between the actual multiplication of cases of a disease and its better recognition. The number of patients who attend out-patient departments complaining vaguely of "their nerves" is noteworthy. Any malaise of indeterminate origin is attributed to the nerves, and the task of dissecting the imaginary from the real frequently calls for the most exemplary patience on the part of the examiner. There is a vast field of minor nervous disorders, of which the remark of Pitres is profoundly true, that "les maladies les plus faciles à observer ne sont pas toujours les mieux connues." Among these the so-called professional cramps occupy a foremost place. A professional cramp is an affection characterised by tonic or clonic convulsive movements, or by trembling or tremors, or paresis or palsy, which occur solely during the execution of a particular professional act, and are localised in some or all of the muscles which coöperate synergically in the performance of

that act. Professional dyskinesis, or occupation neurosis, is a preferable term. For the production of the condition the combination of a congenital predisposition with frequent repetition of the same functional act is essential; neither by itself is capable of establishing an occupation neurosis. It is more than 40 years since Duchenne of Boulogne ascribed the trouble to some central disturbance, and more than 30 since the late Dr. Vivian Poore advocated the peripheral theory in the pages of THE LANCET. Whichever be the view adopted, the importance of the mental factor must not be lost sight of. Mild local affections, such as arteritis, synovitis, myositis, and neuritis, have been noted, but they are inadequate to explain the specialisation of the neuroses. If we say that certain nerve cells concerned in the coördination of professional acts, and excited or exhausted by overwork in a predisposed individual, undergo a dynamic alteration whereby they respond to further calls on them by spasms, tremors, or paralyses, we have expressed all that is at present likely to be learnt of the pathogeny of the occupation neuroses. Yet they are being added to almost daily; automobilists' cramp appears to be the latest arrival. In a series of articles which have been furnished to the *Nouvelle Iconographie de la Salpêtrière*, M. Macé de Lépinay has given an admirable study of them. A consideration of the all-important question of prognosis M. de Lépinay says must be based on four factors: the exciting cause, the presence or subsequent development of other neuroses, the patient's mental condition, and the duration of the affection. Prophylactic treatment is, of course, often impossible. Treatment by drugs is mostly immaterial. Physical treatment consists in professional rest, which is neither sufficient nor indispensable in M. de Lépinay's opinion, in local or general applications of electricity, massage, local and general hydrotherapy, and in particular in the "hydromineral cure," a method much vaunted in France at present. Psychical treatment is the necessary complement of the physical, and consists in patient, methodical, progressive muscular re-education or kinesitherapy. Combine with this the efficacious action of psychotherapy, and the physician has a weapon at his disposal in the guise of psycho-motor discipline with which occupation neuroses can often be most successfully combated.

PLAGUE shows no abatement in Mauritius. The Governor has notified the Secretary of State for the Colonies that 25 cases with 11 deaths were reported during the week ending Oct. 21st.

Dr. Norman Moore, physician to St. Bartholomew's Hospital, has been elected to an honorary Fellowship of St. Catherine's College, Cambridge.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held on Oct. 15th, Dr. de Havilland Hall being in the chair. The accounts presented showed a great falling off in the sickness claims, both in number and duration, during the summer months as compared with the experience of the winter. In a society formed for the most part of medical men in general practice, and therefore liable to exposure to bad weather, it is clear that such a result as this must be looked for. The financial results of the year's working have so far been very satisfactory, and, as in every previous year of the society's history, a substantial addition has been made to the invested reserves. Prospectuses and all further information may be obtained on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

SOME CONSIDERATIONS OF MEDICAL EDUCATION.

II.[1]

The One-portal System.—The Introductory Examination in General Subjects.—The Examination in Preliminary Scientific Subjects.

THE state of the medical education of the country is dependent equally upon two things: the opportunities for the acquisition of learning and practice offered at the centres of medical instruction, and the methods of testing the knowledge of the students which are employed by the various degree- and diploma-granting bodies. To report upon these opportunities and methods in complete detail would be entirely without the scope of these articles, for such a programme would imply the description of the state of every dissecting-room, of the standard demanded by every examiner in every subject, of the ability displayed by every lecturer on medical matters, and so on. Some such complete dealing with the subject was possible 30 or 40 years ago, both the number of medical centres and the number of subjects included in the medical curriculum being so much smaller. Now it is no longer possible, but fortunately there is no need whatever for it, as there are many easily accessible sources for much of this varied information, while there is good evidence to show that the medical education of the student at all the different centres presents many similar features, and the controlling power of the General Medical Council makes it certain, as we have seen, that the examinations which close these similar curriculums will themselves be similar. This fact has seemed to many to be in itself a fairly complete answer to those who advocate the institution of a one-portal system, under which all men would enter the medical profession after passing one State examination. The essential features of such a system, they say, are already present in our scheme of medical education, for, whatever the educational body under whose ægis the student decides to enter the medical profession, his examinations will be arranged upon a common plan and brought up to a common standard by the central authority. But the answer does not meet the case in all directions. When medical education was a much simpler affair and when almost every medical man in England (for example) became qualified as a Member of the Royal College of Surgeons of England or as a Licentiate of the Society of Apothecaries of London, or as both, as far as England was concerned, something like a one-portal system did exist, the presence on the Register of the names of an inconsiderable number of graduates of three or four universities not giving rise to any grave feeling of class distinction between the members of our learned profession. Certainly the English diplomates sometimes displayed a little acerbity with regard to the privileges allowed to Scottish graduates in medicine whose training was in no way superior to their own, a feeling which was faintly shared by Irishmen; but, roughly speaking, the vast majority of medical men entered the medical profession in the same way, and the only graduation in rank recognised among themselves was due to the class of their work. Now this is all altered. The methods of entrance to practice are not only numerous but dissimilar to an extent which the supervising authority of the General Medical Council cannot alter, though maintaining a good general standard; and the departure from a one-portal system has become very complete.

The part of supervision played by the General Medical Council is to admit the student to the roll of the profession when he is successful in obtaining the necessary qualifications, and to see that those qualifications are adequate. The

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part played by the qualifying body is to examine him at different stages of his career, guaranteeing that he does not enter for those examinations until after the attendance at certain classes, and the expiry of certain time. The first step in the education of the medical student is his registration, and the registration of a student is not compulsory. The General Medical Council has laid down regulations in reference to the registration of students which are very precise, but there is nothing in the Medical Acts making it incumbent upon the student to enter his name with the Council at the commencement of his studies. It is sufficient for his name to be enrolled by his qualifying body upon passing one of the statutory preliminary examinations; that body becomes responsible for not admitting him to his final examination until five years later. It is important to remember exactly how the matter stands, as upon this very point of registration some quite acute differences of opinion hinge.

The preliminary examination, as provided for by the General Medical Council, supposing the student not to begin his studies by passing any recognised test at his university or corporation, is of fair scope, though it might be made harder, and the degree- and diploma-granting bodies have shown their readiness to comply with the modest requirements by instituting tests at least as rigorous as the statutory recommendations enjoin. The matriculation of the University of London is harder than the examination which opens up the career of medicine at other centres, but of recent years that examination has been modified, and exemption from it has been granted to medical students who have passed easier tests. But far more application is required from the student to pass the matriculation examination at the University of London than is required to pass any of the other entrance examinations, and the student who has passed it should be able to assimilate with greater ease the subjects of the purely professional examinations, but this depends a little upon the way in which he has learned his work. A number of those who matriculate at the University of London have been most laboriously coached; they can reproduce answers to many questions, but it seems to be a general opinion that in too many instances they acquire habits of working which do not tend to make of them practical medical men. The General Medical Council might well insist upon an all-round raising of the standard of general education, but in so doing it is necessary that any premium on cram should be avoided. Elasticity in the educational curriculum is more and more wanted as we grow to perceive that there is room in the ranks of the medical profession for workers of every kind.

The next step in the education of the medical student brings us to a point around which discussion rages. It is difficult enough to decide what subjects are strictly professional and what subjects are preliminary to the study of medicine, but it is doubly hard to arrive at a definite opinion how far it is well that the student should have acquired any knowledge of the preliminary subjects before beginning his curriculum of five years' study as a medical student proper, registered or unregistered. For the proper teaching of anatomy and physiology a medical school is required, but for instruction in zoology, chemistry, and botany, supposing botany still to be required as a compulsory subject apart from morphology, no medical institution is necessarily demanded for the student's work. Theoretically, as we said in the previous article, the preliminary scientific examination, the subjects of which are chemistry, botany, biology, and physics, should be passed at the end of the first year of the curriculum, leaving the student free to devote two full years to the study of anatomy and physiology and two full years to work in the wards with the chance of obtaining his qualifications as a qualified medical man within five years. The questions which immediately arise are: Can a knowledge of chemistry, botany, biology or zoology, and physics be acquired in a year with sufficient fulness to be of permanent value to the student? Is there not a risk either that mere smatterings only will be learnt or that the student in his desire to enter more fully into the subject should fail to be ready for his examination at the end of a year; in other words, should encroach upon time which ought to be, or is designed by the General Medical Council to be, devoted to purely professional subjects? Some observers, those who are best satisfied with the position of things as they are, and are the most certain that progress in medical education is taking place along the right lines, will say that a year is quite sufficient time in which to obtain familiarity with the principles of chemistry, botany, biology, and physics if the instruction in those subjects is given only with direct reference to medicine, it being, of course, understood that the examiners in testing the knowledge of the students will be careful to observe the same limitation. Other authorities conceive that to ask the student to spend only a year on these subjects is to invite him to obtain a verbal acquaintance with things which he does not understand, and must tend to divorce the practice of medicine from its proper adherence to the sciences with which it should be indissolubly blended. The importance of the difference of views thus expressed is accentuated by the fact that each party would logically desire a different course of proceeding in the mechanism of medical education, and though the truth may lie between the two extreme points of view it is not easy to advise an intermediate course of action which should correspond with that intermediate truth. Those who desire that the medical student should be educated in the preliminary scientific studies solely with the eye to his use of those studies in the practice of medicine will naturally hold that he should study those subjects in a medical school. Those who consider that the medical student, especially, for example, in such subjects as biology and chemistry, should receive thorough and systematic teaching on general lines—any medical application of what he has learned being allowed to reach him afterwards—would wish that the systematic teaching should be given at a scientific institution or as part of a general university curriculum, and not at a medical school. Now, although it is possible to devise a schedule for the examination of medical students in the preliminary scientific subjects which shall on the one hand be fairly general and systematic, and shall on the other have obvious applications to medicine, it is not easy to devise an institution for the teaching of these subjects which is both a medical school and not a medical school. For this reason those who desire that the lad should learn his preliminary scientific studies at school before beginning his professional course and those who wish him to learn them at medical schools cannot agree, for the strong points in the arguments of each are not open to compromise.

And the whole situation is further complicated by the fact, to which allusion has been made already, that the registration of the medical student not being compulsory the General Medical Council, the central authority of medical education, has no hard-and-fast jurisdiction over the beginning of the course. If registration as a student were compulsory upon the medical student it would be easier for the General Medical Council to ensure that instruction in these preliminary subjects was only acquired at certain places where the standards and facilities for learning appeared to the Council as the central authority to be satisfactory, but registration not being compulsory the duty of the Council is confined to registering the student as

a practitioner when he has passed all the necessary tests, it being left to the particular educational body by which he is entering the profession to ascertain, by any system which seems good, whether he has spent the necessary time upon his curriculum and to guarantee to the Council his due observation of the statutes. It follows from this that a student can learn his preliminary scientific subjects either at a medical school, or at a public school, or at a university, exactly as he likes, if the body under whose ægis he intends to enter the medical profession is satisfied with the place where he has obtained his instruction. The position thus arrived at may appeal by its flexibility to those who find that our educational courses have in every walk of life a great tendency to become too confined by regulations and too cramped by syllabuses, but it is not a universally fair one. Thus one student may enter, say, in October, 1909, at the medical school attached to one of the metropolitan hospitals with the expectancy of becoming a qualified medical man at the end of 1914. He then proceeds to learn at the medical school his preliminary scientific subjects. Another student of the same age may learn his preliminary science subjects at a public school where the course is approved by the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England. He need not enter a medical school at all till 1910, and will do so having passed not only his entrance examination but his examination in preliminary science subjects. He will have enjoyed the advantage of one more year in the sheltered life of a public school and will possibly have learned his preliminary scientific subjects better from a general point of view than he would have learned them at many of the London medical schools, which schools labour manfully under great disadvantages in instructing their pupils. Until quite recently the student under the English Conjoint Board who entered the medical school in 1910, having done his preliminary scientific course at school, was able, like the student who entered in 1909, to sit for his final examinations in 1914, the last year of his school life counting as the first year of his medical curriculum, and of the two students he was probably the more likely to obtain his qualifications in 1914. The Conjoint Board has now made a concession in that the last year spent at a public school only counts to the student as six months of his curriculum.

(To be continued.)

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

The New 14–16 h.p. Darracq Car.

FOLLOWING the unmistakable tendency that there is towards four-cylinder cars of more moderate power, and of considerably lower price, the Darracq Motor Company, Limited, of Walnut Tree Walk, London, have introduced a new model, which, both in price and design, should meet the present demand. As it will be shown at Olympia in a few days, it struck me that the medical profession visiting the exhibition might appreciate some facts about this car, which is four-seated, of light weight, sufficient power, reasonable speed, and is turned out complete at the moderate figure of £225. Of course, if a firm of no previous reputation brings out a vehicle of original features, the prudent man will think twice before considering a purchase, but in this case the innovation is vouched for by a company with an established name, and seems to me to imply a good deal as to the future policy of Messrs. A. Darracq and Company, Limited.

Now to describe the car both briefly and clearly. The four cylinders have each a bore of 85 mm. and a stroke of 100 mm., and are cast in one piece; the valves are all on one side, so as to be worked by one cam shaft; and this shaft projects, so that if a supplemental ignition is ordered, a coupling can be attached and the commutator so driven. The valve-lifters are fitted with rollers where they receive the impact of the cams on the two-to-one shaft, and the guides are cast in the upper part of the crank case. Standard ignition is by a high-tension Sims-Bosch magneto, with fixed timing. It is driven by gearing, and the spindle also works the water-circulating pump. The magneto is held by a single nut to the top of the crank case. I prefer a stirrup for holding the magneto to its bed. I found that I was able to undo the nut, but it was very inaccessible and troublesome; undoing a nut underneath a projection and needing contortions of the hand to get at, may also be damaging to the professional look of the practitioner's cuffs. The carburettor is both simple and accessible; the petrol enters the top of the float chamber by gravity, and passes to the jet, which stands up in an open tube, leading to the inlet valves by a throttle, with an automatic air-intake. Through the open lower end of the tube air is sucked, petrol comes up the jet, and the amount that reaches the engine is regulated by a foot-controlled throttle. Slacken one exposed nut and then the jet can be pushed up and withdrawn. If there were not other inducements, and as a matter of fact there are many, this convenient petrol jet would be enough to make me think highly of the car. I have a recollection of once having to take down a carburettor, so as to clear a blocked jet, and, in that case, to get the carburettor off necessitated removing inlet pipes and hot exhaust pipes, so the accessible jet appealed greatly to me. Lubrication is automatic, but without any visible apparatus on the dash. Inside the crank case is a plunger pump driven off an eccentric on the cam shaft, and thus lubricant is supplied to the crank case, gudgeons, and main bearings. Under the crank case is a sump from which the pump feeds and to which all surplus oil is returned. The oil is introduced by a pipe projecting from the crank case, and a float stands out of this pipe from the height of which the quantity of oil can be judged, and the time for replenishing the supply gauged. To make sure that the oil pump is performing its work, a little tap is screwed into the crank case near the carburettor, with the engine running; if the pump is operating, oil will shoot out of the tap when it is opened. The pump can also be fairly easily got at. The chassis, which is of pressed steel, forms the underframe and shield, but in the centre there is an opening through which, standing in a pit under the car, a plug in the lower half of the crank case can be taken out, and then with a long screw-driver the pump can be extracted.

The cooling system is worked by a gear-driven pump, and a large fan behind the gilled tubed radiator further ensures ample cooling. On the trial run of two hundred and odd miles the cooling was ample to enable the engine to develop its full power for very long periods. The transmission is by a leather-covered cone clutch, the engagement of which is made easy by buffer springs, through a short shaft with squares at each end to a gear box, in which provision is made for three speeds forward and a reverse. These are effected by double-sliding pinions, controlled by one lever working in a gate quadrant. From the gear-box a cardan shaft with a universal joint at either end conveys the power to the live axle. The back axle revolves with the wheels and is encased in a steel sleeve, an enlargement of which forms the differential case, and in this the crown wheel meshes with the bevel at the end of the cardan shaft. The side thrust is taken up by ball-bearings. In the gear-box as well as for the wheels plain bearings are employed. Provision is made for increasing the tension of the clutch spring. Another characteristic is the comfort of the car's suspension, which is the result of semi-elliptic springs in front and three-quarter elliptic at the back. The steering pillar is well raked, and provision is made for closing up the bearing surfaces, so as to avoid play or backlash as they wear. The control is by a foot accelerator, working the throttle in the induction pipe, and it is certainly preferable to a hand-worked control; the only trouble that I had in this particular instance was that the spindle on the mushroom was rather short, and I found it rather a stretch to keep the pedal down. The makers, of course, could easily fit a longer spindle in accordance with the driver's length of limb. An extra control is fitted to a sector attached to the dash, which is useful for starting the engine; an agitator is also attached to the carburettor for flooding, and so obtaining a richer mixture, an advantage for starting, especially in cold weather. Instead of a switch a small button projects on the dash, by

which the electricity is earthed and cut off from the engine. Internal expansion brakes are fitted to the hubs of the rear wheels and a foot-brake of similar design is mounted behind the gear-box. Artillery wheels are supplied with 810 × 90 tyres.

Messrs. Darracq usually fit a four-seated double phaeton body to this car, but the chassis would do well with a two-seated body and front glass and hood for the practitioner who is his own chauffeur, while with a landaulette body it would make an ideal carriage for the medical man who does not drive himself. The makers had such confidence in the car, or the writer, perhaps in both, that they handed me a new one from stock, with the request that I should take it for a drive without any representative of their firm, and use it for any trial I considered proper. I certainly took them at their word, and though the weather was unfavourable, with three passengers I used it for a holiday tour, over Kentish hills, through London traffic, viâ Kingston, Staines, Maidenhead, Henley, Beaconsfield, up the 1 in 11 Studley Green Hill, down Cockshoot Corner, and so by Oxford, Blenheim Palace, Shipston-on-Stour, Stratford-on-Avon, Warwick, Leamington, and home by Daventry and Towcester, with a good test for the brakes on West Hill, Highgate. In all it was over a 200-mile run, and as a result I find that this little four-cylinder car has the merits of silence, flexibility, and smooth running, and power enough to ensure a good average speed up hill and down dale. In fact, with four passengers it took many hills of 1 in 14 easily on the second speed, and did a test hill of 1 in 6 without a murmur on the first speed. It seems to meet the requirements of the average medical man who is seeking for a fair-sized car of the orthodox type but only desires to pay a comparatively small sum for possession and upkeep. It is certainly as simple and free from complications as a car can be, and should be inspected by all medical men attending at Olympia in search of a motor.

Chauffeurs and their Liveries.

A recent case at the West London police-court is of interest, as evidence of what chauffeurs may try to obtain by virtue of common custom. In the case in point the owner of a car who had dismissed his driver sued the latter for the return of livery supplied while in the plaintiff's service. The defendant contended that the custom was for the livery to be given to the driver, but the learned magistrate properly held that such custom was not established and made an order for the return of the overcoat in question.

MORTALITY FROM "CONSUMPTION" IN DUSTY TRADES IN THE UNITED STATES OF AMERICA.

WE have received from the Government Printing Office at Washington Bulletin No. 79 of the Bureau of Labour, which contains an important report by Frederick L. Hoffman on the mortality from consumption in dusty trades. Whether or not the writer is a member of our profession we are uncertain, but it would appear as though this were the case, for in the present report he refers to his own contributions on tuberculosis and other allied topics to various American medical periodicals and medical societies. But in either case the salient points of this report are well worthy of comment.

The use of the term "consumption" in such a work seems to us unfortunate, for the reader is left to decide for himself whether it is meant to indicate pulmonary tuberculosis exclusively, or whether it applies to all forms of tuberculous disease. From the context, however, we gather that the former is the sense in which the term is employed; and in what follows the term "consumption" will be regarded as synonymous with tuberculous phthisis. In order to determine approximately the loss of life from phthisis in the various occupations, several statistical expedients are resorted to in the United States. Among these the most trustworthy method is obviously that of ascertaining the true rate of mortality—i.e., the number of deaths occurring in every 1000 persons in any particular industry. This is the method adopted by Dr. John Tatham in his successive supplements to the reports of the Registrar-General of England, to which frequent reference is made in the present work. But in America it is seldom employed; in the first place, because of the want of accurate information regarding the numbers found to be engaged in the several employments at the last census, and in the second place because of want of uniformity in the classification of workers adopted by the several Boards of Health. The expedient most favoured in the United States is that of calculating the proportion of deaths from a particular disease as a percentage of the total deaths at specified periods of life. The result is termed the "proportionate mortality figure," and this has been extensively employed in the present report with the object of utilising the valuable insurance mortality statistics which in America are generally available for the purpose.

In this connexion a warning is desirable against confounding the term "proportional mortality figure" as used in this report with the term "comparative mortality figure" as employed in the supplements to the reports of the English Registrar-General, the latter term having an entirely different meaning. In America the insurance mortality statistics are derived from the experience of a large and representative company which has from time to time published the facts of its experience. The insurance proportional mortality returns, however, obviously indicate a phthisis death-rate which is below the normal, since the figures are affected by medical selection. In other words, the true loss of life from consumption at specified ages would have been higher had no medical selection of the lives been effected. The method of applying the proportional mortality figure to workers at successive ages in the various occupations may be illustrated as follows. At ages 25 to 35 years, out of every 100 deaths from all causes in the United States registration area during the last seven years 31 were from phthisis; the corresponding proportion of deaths in the industrial insurance mortality experience was 71 per cent for grinders, 67 per cent. for compositors, 59 per cent. for upholsterers, and 53 per cent. for potters, &c. The difference between the normal proportional phthisis mortality for the entire area on the one hand, and that of the individual occupations on the other, measures approximately the hazard to health and life in the several industries.

Without attempting to follow the author in his detailed descriptions of occupational mortality, which occupy 240 pages of an octavo volume, we proceed to summarise some of the more interesting of his conclusions. For the purposes of the present investigation careful analysis has been made of nearly 23,000 deaths from all causes occurring among workers of various ages in the principal industries of the United States. Taking together all the occupations for which information is available, the proportional mortality from consumption at all ages above 15 years appears to average 28 per cent. of the mortality from all causes. Among individual industries the proportion ranges from the highest, 37 per cent., in those occupations which are exposed to metallic dust, to the lowest, 24 per cent., in occupations exposed to organic dust. Extending the analysis to divisional periods of life, we find that at ages 15 to 25 the proportional consumption mortality was highest (viz., 50 per cent.) in occupations exposing to the inhalation of animal and mixed fibre dust, and next highest (viz., 47 per cent.) in occupations exposing to metallic dust. In occupations exposing to organic dust it was 41 per cent.; to street dust, 40 per cent.; to vegetable fibre dust, 39 per cent.; and to mineral dust, 32 per cent. At ages 25 to 35 the proportional consumption mortality was highest (viz., 57 per cent.) in occupations exposing to metallic dust; in occupations exposing to vegetable fibre dust it was 53 per cent.; to organic dust and to animal and mixed fibre dust, 50 per cent.; and to street dust, 44 per cent. At ages 35 to 45 it was highest (viz., 43 per cent.) in occupations exposing to metallic dust; in occupations exposing to animal and mixed fibre dust and to vegetable fibre dust it was 40 per cent.; to mineral dust, 36 per cent.; to organic dust, 36 per cent.; and to street dust, 35 per cent. At ages 45 to 55 it was highest (viz., 28 per cent.) in occupations exposing to mineral dust; in occupations exposing to metallic dust it was 24 per cent.; to animal and mixed fibre dust and to vegetable fibre dust, 23 per cent.; to organic dust, 22 per cent.; and to street dust, 14 per cent. At ages 55 to 65 it was highest (viz., 16 per cent.) in occupations exposing to mineral dust; whilst in occupations exposing to the inhalation of other irritating kinds of dust it averaged from 11 to 12 per cent. of the deaths from all causes.

With respect to that period of life in which pulmonary

phthisis is most prevalent in America the following particulars will be interesting. In the year 1900 the mortality from all causes among men in specified industries was 15·0 per 1000, and the consumption-rate was equal to 16 per cent. of that mortality. Among men in manufacturing industries the general death-rate was 13·8 per 1000, of which 18·8 per cent. was due to consumption. Among men in agricultural, transportation, and other outdoor occupations the general death-rate was 15·8 per 1000, and the consumption death-rate equalled 9·5 per cent. of the total. By contrasting the consumption mortality in these two groups of employment the enormous waste of human life becomes readily apparent. This will be even more clearly shown if we quote a few particular instances. Thus we read that the census mortality rate from all causes among stonecutters was 14·9 per 1000, 36·2 per cent. of which was due to consumption. Among printers and compositors the general rate was 12·1 per 1000, 36 per cent. of which was credited to consumption. On the other hand, among the strictly outdoor class—i.e., farmers and farm labourers—whilst the general death-rate was relatively high, viz., 17·6 per 1000, the consumption death-rate was only 1·1 per 1000, or 6·3 per cent. of the mortality from all causes.

Adopting the author's estimate of about 32 millions as the number of the American wage-earning population above the age of 15 years, and assuming a consumption death-rate among them of 2·2 per 1000, the number of lives lost by consumption in this section of the population would approximate to 70,000. If by intelligent sanitary inspection and control, especially as regards ventilation, it were possible to eliminate most of the conditions injurious to health in factories and workshops, it is quite reasonable to hope that the consumption death-rate among wage-earners would be reduced to a ratio not exceeding 1·5 per 1000. Such a reduction would mean an annual life-salvage of more than 22,000 lives. The author goes on to calculate, by placing an arbitrary economic value on the net result of a year's life, that the annual financial value of such life-salvage would be colossal.

THE FIFTY-EIGHTH REPORT OF THE INSPECTORS OF LUNATICS, IRELAND.[1]

THE number of the insane in establishments was on Jan. 1st, 1909, 23,931, this being an increase of 213 upon the number recorded for Jan. 1st, 1908. The increase during 1908 was greater than that which took place in 1906 or 1907. It was, however, 200 less than the average increase for the preceding ten years. The numerical increase at the end of last year appears mainly to be due to the transfer to the asylums of the inmates of the imbecile wards of workhouses. As no certificates of insanity are required for the cases maintained in workhouses the vacancies caused by such transfers are quickly filled up by paupers suffering from the mental decay of old age, and these cases, which were not previously classified as insane, are then for the first time returned amongst the insane inmates of the workhouses, thus swelling unduly the number of the insane under care. During the year 1908, 816 cases were transferred from workhouses to asylums, being over 21 per cent. of the total number of admissions to the latter institutions. The percentage was higher than that of any year since 1904. Unfortunately, these transfers are included amongst the first admissions, and therefore, without the necessary correction, such admissions cannot be accepted as showing the amount of freshly occurring insanity in the community or as affording reliable data on which to draw conclusions regarding the increase or decrease of insanity amongst the population. In 1881 the admissions to district asylums numbered 2592 and in 1908 they amounted to 3798. In the case of the private asylums the numbers for 1881 were 145 and for 1908 they had increased to 269. The increase in the last as compared with the first year of the period amounted in the case of district asylums to 52 per cent. and in the case of the private asylums to 86 per cent. The number of the insane under care has increased from 250 per 100,000 of the population in 1880 to 547 per 100,000 in 1908. The total number of patients discharged during the year was 1848. Of these, 1401 were discharged recovered, showing an increase of 30 on the number for the previous year. The percentage of recoveries on the admissions was 36·9. The number of deaths during the year was 1417. The death-rate per cent. of the daily average number resident was 7·1. In only 235 cases were post-mortem examinations made, and in two asylums no necropsy was made during the year.

It appears that complaints have recently been made by the medical superintendents of some asylums that the candidates for appointment as attendants and nurses are generally of a lower standard—physically and mentally—than those who offered themselves for such posts in former years. It is manifest that to obtain persons physically and constitutionally sound, of good intelligence, and of kindly disposition and temper, it is necessary that the wages offered and the conditions of service should be sufficiently attractive. In so poor a country as Ireland it is not to be expected that the remuneration can be as high as that paid for similar services in some other countries. All that can be asked is that the wages offered to candidates entering the asylum service should not be lower than the usual rate of remuneration for skilled labour in the neighbourhood, and that the conditions of service—including accommodation, food, and hours of duty—should be made as attractive as possible. It appears, however, that although in some asylums the wages and conditions of service have been greatly improved, in others they remain as they were many years ago, and are below the average now paid for similar labour elsewhere.

We notice with regret that the inspectors have in a large number of the asylums to report on the defective character of the accommodation. In one asylum the wings of the institution provide very cheerless and prison-like accommodation. The day rooms are insufficient for the numbers who sleep there, and consequently some of the women have to sit in the flagged corridor during the day. In another asylum the want of day-room accommodation is especially noticeable; in fact, there is an almost total absence of day-rooms, the great majority of the patients having to be crowded together in corridors. In another the number resident is considerably in excess of the number for whom there is proper accommodation, and the overcrowding is so great that beds have in some cases to be laid down in corridors. In yet another the institution is so overcrowded that a great number of the males have no indoor accommodation in which to spend their days. The inspection of the workhouse accommodation for the insane has revealed conditions which are in several cases even more unsatisfactory.

[1] The Fifty-eighth Report of the Inspectors of Lunatics (Ireland) for the Year ending Dec. 1st, 1908. Dublin: Printed for His Majesty's Stationery Office by Alexander Thom and Co., Abbey-street.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Oct. 29th, 1831.

To the Editor of THE LANCET.

SIR,—I have searched all the books to which I have access on diseases of the eye, but cannot meet with a description of any case attended with symptoms similar to the following, which has been under my care for the last fortnight, and an account of which I now send, for insertion in your much-esteemed Periodical, in the hope that some of your ingenious correspondents may be induced to favour the public with their opinion on it, and at the same time make known whether experience or reading has furnished them with any example of the kind, adding to their account a statement of the medical treatment and results.

John Frost, carrier, aged 48, of stout make and rather plethoric habit, on his return from Exeter market, was seized with such a dimness of sight that he could not discern any object at the distance of a few yards, and was unable to keep on the road without holding by the end of his cart, though it was only about three o'clock P.M., and the day quite fine and clear. Before reaching his home, however, he found that on closing, or covering, *either* eye with his hand, he could see sufficiently well with the other. I was sent for to his house next morning, and found that he could scarcely perceive even

the lines of a book when both eyes were open, but that on closing either of them he could read distinctly every word.

These symptoms were accompanied with considerable pain in the forehead, and a full, quick, and rather hard pulse; being a stout man, I took from the arm about 24 ounces of blood, gave him some compound *colocynth pills*, with a grain of *calomel* in each; two to be taken every three hours till the bowels were freely opened, and directed a blister to be applied to the back of the neck at bedtime. Next day I found the pulse softer, the pain of the head gone, but no alteration in the sight, either for the better or worse. In this state he continues, entirely free from pain, but still under the necessity of wearing a bandage over one eye, without which he cannot even see to walk. *Errhines*, and a little *spt. etheris sulphurici*, applied to the eyes twice a day since the application of the blister, always afford him temporary benefit. I cannot discover the slightest irregularity in the motions of the iris; the pupils seem neither more dilated nor contracted than they ought to be; the humours appear perfectly transparent and healthy, and there are no traces of either irritation or inflammation to be perceived. Whether the above anomaly portends the commencement of amaurosis, or is to be considered merely as resulting from a temporary weakness or relaxation of nervous power, I shall leave to the determination of the learned; but I cannot help thinking, that it strongly favours the opinion of those who advocate the existence of some *fluid essence* circulating in the course of the nerves, the influx of which, in this case, seems insufficient for supporting the action of both eyes at once, but enough when directed upon one of these organs to render vision complete.

I am, Sir, your most obedient servant,

WILLIAM REED, Surgeon.

Kentisher, near Collumpton, Devonshire, October 20th, 1831.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8180 births and 3771 deaths were registered during the week ending Oct. 23rd. The annual rate of mortality in these towns, which had been equal to 12·9 and 12·2 per 1000 in the two preceding weeks, further declined to 12·0 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these towns averaged 12·4 per 1000, and in London during the same period the rate did not exceed 11·9 per 1000. The lowest annual rates of mortality recorded in the 76 towns last week were 5·2 in West Hartlepool, 5·6 in Ipswich, 5·7 in Walthamstow, and 6·5 in Willesden; the rates in the other towns ranged upwards, however, to 19·2 in St. Helens, 19·3 in Huddersfield and in Middlesbrough, 19·5 in Great Yarmouth, and 20·6 in Merthyr Tydfil. In London the recorded death-rate last week did not exceed 11·5 per 1000. The 3771 deaths in the 76 towns last week showed a further decline of 74 from the numbers returned in the two preceding weeks, and included 312 which were referred to the principal epidemic diseases, against numbers declining steadily from 849 to 387 in the eight preceding weeks; of these 312 deaths, 142 resulted from diarrhœa, 46 from diphtheria, 36 from measles, 33 from scarlet fever, 28 from whooping-cough, 25 from "fever" (principally enteric), and 2 from small-pox. The 312 deaths from these epidemic diseases last week were equal to an annual rate of 1·0 per 1000, against rates declining in the eight preceding weeks from 2·7 to 1·2. No death from any of these epidemic diseases was registered last week in Cardiff, Croydon, Willesden, Walthamstow, or in 12 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·8 in Salford, 3·0 in Hull and in Hanley, and 3·4 in Barnsley. The deaths attributed to diarrhœa in the 76 towns, which had declined in the eight preceding weeks from 675 to 208, further fell last week to 142, but caused annual death-rates ranging upwards in the several towns to 1·6 in St. Helens, 1·7 in Wigan and in Hull, and 1·9 in Devonport and in Tynemouth. The deaths referred to diphtheria, which had been 28 and 51 in the two previous weeks, declined again last week to 46; they included 11 in London and its suburban districts, 6 in Manchester and Salford, and 3 in Hull. The 36 fatal cases of measles were fewer by 4 than the number in the previous week, but showed proportional excess in Birkenhead and in Hornsey. The 33 deaths from scarlet fever showed a further decline from those returned in the two previous weeks; the 4 recorded in Blackburn were equal to an annual rate of 1·5 per 1000. The 28 fatal cases of whooping-cough exceeded those in the previous week by 1. Of the 25 deaths referred to "fever," 2 were returned in Wolverhampton, in Liverpool, and in Leeds, and 7 in London and its suburban districts. The 2 fatal cases of small-pox occurred in Hull. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had steadily increased in the eight preceding weeks from 2347 to 2810, had declined to 2799 on Saturday last; 345 new cases of this disease were admitted to these hospitals during last week, against 324 and 371 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 2 small-pox patients on Saturday last. Of the 1067 deaths registered in London last week, 174 were referred to pneumonia and other diseases of the respiratory system, against 186 and 167 in the two preceding weeks, and were 25 below the corrected average number in the corresponding week of the five years 1904–08. The causes of 37, or 1·0 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in Bristol, West Ham, Bradford, Newcastle-on-Tyne, Portsmouth, and in 50 other smaller towns; the 37 uncertified causes of death in the 76 towns last week included 7 in Liverpool and 6 in Birmingham.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 886 births and 470 deaths were registered during the week ending Oct. 23rd. The annual rate of mortality in these towns, which had been equal to 12·0 and 12·8 per 1000 in the two preceding weeks, further rose to 13·1 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these Scotch towns averaged 12·6 per 1000, and exceeded by 0·2 the mean rate during the same period in the 76 large English towns. The annual death-rates last week in these Scotch towns ranged from 10·2 and 10·4 in Paisley and Edinburgh, to 14·8 in Glasgow and 17·0 in Perth. The 470 deaths from all causes in the eight towns last week showed a further increase of 14 upon the numbers returned in the two previous weeks, and included 54 which were referred to the principal epidemic diseases, against 45 in each of the two preceding weeks. These 54 deaths were equal to an annual rate of 1·5 per 1000, against a mean rate of 1·0 from the same diseases last week in the 76 English towns. The 54 deaths from these diseases in the Scotch towns last week included 28 from diarrhœa, 11 from diphtheria, 5 from measles, 5 from whooping-cough, 3 from scarlet fever, and 2 from "fever," but not one from small-pox. The deaths attributed to diarrhœa, which had been 18 and 15 in the two previous weeks, rose to 28 last week, and exceeded the number in any week since the early part of September; 14 occurred in Glasgow, 5 in Dundee, 3 in Aberdeen, and 2 in Edinburgh and in Leith. The 11 deaths from diphtheria were within one of the number returned in each of the two preceding weeks, and included 6 in Glasgow and 3 in Edinburgh. The 5 fatal cases of measles showed a decline; 3 were returned in Glasgow and 2 in Edinburgh. The 5 deaths from whooping-cough exceeded the numbers in recent weeks, and included 2 in Greenock; and the 3 fatal cases of scarlet fever occurred in Glasgow. The 2 deaths referred to "fever" were fewer than in any recent week, and were both certified as cerebro-spinal meningitis; 1 each was returned in Glasgow and in Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 59 and 58 in the two preceding weeks, rose to 84 last week, and exceeded by 28 the number in the corresponding week of last year. The causes of 17, or 3·6 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated

population of rather more than a million, 613 births and 325 deaths were registered during the week ending Oct. 23rd. The mean annual rate of mortality in these towns, which had been equal to 15·1 and 15·2 per 1000 in the two preceding weeks, declined to 14·8 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these Irish towns averaged 15·0 per 1000, whereas the mean death-rate during the same period did not exceed 12·4 in the 76 largest English towns and 12·6 in the eight principal Scotch towns. The annual death-rate during last week was equal to 15·2 in Dublin (against 17·5, 16·8, and 16·0 in the three preceding weeks), to 12·9 in Belfast, 21·2 in Cork, 16·9 in Londonderry, and 19·5 in Waterford; the mean rate in the 16 smallest Irish towns was equal to 14·5 per 1000. The 325 deaths from all causes in the 22 town districts last week showed a decrease of 9 from the numbers in the previous week, and included 22 which were referred to the principal epidemic diseases, against 42, 37, and 29 in the three preceding weeks; these 22 deaths were equal to an annual rate of 1·0 per 1000, corresponding with the rate from the same diseases last week in the 76 English towns. The 22 deaths from these epidemic diseases in the Irish town districts last week included 12 from diarrhœa, 5 from whooping-cough, 2 from diphtheria, and 1 each from measles, scarlet fever, and "fever," but not one from small-pox. The deaths attributed to diarrhœa in the 22 towns, which had been 22 and 14 in the two previous weeks, further declined to 12 last week, and included 5 in Belfast and 2 both in Dublin and in Cork. The 5 fatal cases of whooping-cough were within one of the number in the previous week, and included 2 both in Cork and in Limerick and 1 in Dublin. Of the 2 fatal cases of diphtheria, 1 occurred in Ballymena and 1 in Clonmel. A fatal case of typhus was registered in Dublin. The 50 deaths referred to pneumonia and other diseases of the respiratory system last week in the 22 towns corresponded with the number returned in each of the two preceding weeks. The causes of 14, or 4·3 per cent., of the deaths in the 22 towns last week were not certified by a registered medical practitioner or by a coroner; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent., but in the eight Scotch towns the proportion was equal to 3·6 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: M. L. B. Rodd to the *Niobe*, and to the *Kent* on recommissioning; E. R. D. Fasken to the *Argonaut*. Staff-Surgeons: J. C. Rowan to the *Mars;* P. H. Boyden to the *Fisgard;* and E. T. P. Eames to the *Endymion*. Surgeon: E. Cameron to the *Argonaut*.

ROYAL ARMY MEDICAL CORPS.

Colonel Maclean officiates as Principal Medical Officer, 8th (Lucknow) Division, vice Surgeon-General Ellis, on leave. Colonel Anderson has reverted to his permanent appointment as principal medical officer, Allahabad and Fyzabad Brigades.

Lieutenant-Colonel G. E. Hale, D.S.O., has been appointed medical inspector of recruits in the Eastern Command, and Lieutenant-Colonel T. Du B. Whaite has been appointed to the Eastern Command. Major C. K. Morgan has been appointed to the Belfast District for duty.

Captain Francis S. Irvine, from the Seconded List, is restored to the establishment (dated Oct. 13th, 1909).

INDIAN MEDICAL SERVICE.

Major H. G. Melville officiates as Principal, Medical College, Lahore, vice Major Sutherland, going on one year's leave; and Captain Macgilchrist officiates as Professor of Materia Medica, Lahore Medical College, vice Major Melville. The services of Major Smith are placed permanently at the disposal of the Punjab Government. Captain E. C. Hepper has been appointed to the substantive medical charge of the 51st Sikhs (Frontier Force), vice Captain H. Halliday. Captain G. W. Maconachie has been appointed to the substantive medical charge of the 73rd Carnatic Infantry, vice Captain W. C. Hamilton. Captain R. F. C. Talbot has been transferred to the temporary half-pay list from July 24th.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd Lowland Field Ambulance: Lieutenant James H. H. Pirie to be Captain (dated Oct. 1st, 1909).

1st South Midland Field Ambulance: Lieutenant Hans Frederick William Boeddicker, from the 2nd South Midland Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated Sept. 29th, 1909).

1st North Midland Field Ambulance: Captain William J. Reid to be Major (dated April 19th, 1909).

THE PHYSICAL EFFECTS OF THE ALLOWANCE FIELD SERVICE RATIONS.

An officer with 20 volunteers of the 1st Battalion Loyal North Lancashire Regiment, none of them specially selected, have recently been the subject of an experiment for the purpose of determining the quality and quantity of the field service rations in relation to the clothing and equipment of the soldier. The company were instructed to march for 12 days a distance of at least 14 miles under service conditions. The valise equipment with field service kit was carried together with 150 rounds of ball ammunition, weighing altogether, with rifle, more than half hundredweight. For the first six days the food consisted wholly of biscuit and preserved meat and vegetables. Subsequently fresh meat and bread were issued in lieu of preserved rations, and this was followed by a noticeable improvement in the physique and spirits of the men. A report will be made for the information of the Army Council by Lieutenant-Colonel Melville, R.A.M.C.

Correspondence.

"Audi alteram partem."

THE DANGERS OF THE DRY SHAMPOO.

To the Editor of THE LANCET.

SIR,—My absence in America has prevented me from following in detail the proceedings arising out of the accident in July last in consequence of the use of carbon tetrachloride as a "dry shampoo." I learn, however, on my return that by what has since taken place the public and the trade concerned have been duly warned of the dangerous character of this particular chlorinated compound, carbon tetrachloride. I learn further from the answer returned yesterday by the Home Secretary to a question by Sir William Collins that "the matter is receiving his serious attention and the question whether legislation ought to be undertaken will be fully considered."

I should like at this stage to point out a further consideration that in my opinion is of sufficient gravity to call for prompt decision as to the prohibition or not of the use of carbon tetrachloride and similar poisons for toilet purposes. Carbon tetrachloride, chloroform, ethylene chloride, ethylidene chloride, &c., are all more or less anæsthetic and stimulant, just as in lesser degree ether and alcohol are anæsthetic and stimulant. In my experience the physiological equivalence between chloroform and alcohol is approximately 100 to 1, and a few drops of chloroform or of carbon tetrachloride rubbed in the palm of the hand and inhaled as a "refresher" or a "sedative," are quite as effective, pleasant, and insidious as a glass of brandy. More or less carbon tetrachloride is necessarily inhaled in the course of a "dry shampoo," and there are in existence numerous other chlorinated compounds of similar properties. Chloroform is scheduled as a poison. Carbon tetrachloride, which is more poisonous than chloroform, and allied substances that are more or less poisonous, are not so scheduled.

Ought the use of these substances to be left at the discretion of the more or less enterprising hairdresser? Or ought not the public to be protected by the scheduling as poisons of substances that are more dangerous to life than chloroform and more insidious than alcohol? According to the evidence given by one of the witnesses at the inquest held last July the number of persons taking the dry shampoo with carbon tetrachloride averaged between 90 and 100 per day at one establishment alone (or between 20,000 and

30,000 for the year, with the total consumption of 14 tons of the liquid).

I am, Sir, yours faithfully,

A. D. WALLER.

Physiological Laboratory, University of London,
Oct. 21st, 1909.

EDRIDGE-GREEN'S THEORY OF VISION AND COLOUR VISION.

To the Editor of THE LANCET.

SIR,—The question of the meaning of the structure of the retina is the latest one in physiological optics—i.e., from the subjectival standpoint held by E. Hering, Mach, and myself. As Edridge-Green has found for the distribution of the visual purple, so I, Hering, Hess, Garten, and others, have found only gradual quantitative differences in the sight between the foveal and extrafoveal area. The phenomenon of Purkinje, the alteration of optical white equations by the state of light- and dark-adaptation, the colourless interval for spectral lights of increasing intensity, the different phases of the after-image,—all these subjective reactions exist, not only in the extrafoveal, but also (only gradually diminished) in the foveal region. The analogy between this behaviour and Edridge-Green's objective statement about the visual purple is a striking one.

As *principia*, I believe that it is absolutely necessary for the classification of colours to start with sensation analyses, from the statement of the simple effects by some definite but individually different lights, homogeneous or mixed. It is also necessary to note the changes produced in each case by varying states of light- and dark-adaptation. We must ascertain the position of pure green, pure yellow, pure blue in the spectrum, and of pure red in mixed light, and of the corresponding neutral points in the colour-blind. It is totally wrong to conclude from the constitution of physical stimuli (composition, wave-length) that the physiological effect or the psychological sensation are similarly constituted. Therefore all colour theories based on light mixture (colour mixture is a very bad expression), as the theory of Young-Maxwell-Helmholtz, A. Fick, J. v. Kries, are fallacious.

Hering holds that for the regular cases of colour blindness there is a defect of red-green or yellow-blue or red-yellow-green-blue perception. The antagonistic correlation between red and green and yellow and blue is founded in the nervous apparatus; the regular cases of colour blindness are therefore nervous anomalies. On the other side, I believe that alone or combined with a nervous anomaly there are many cases in which photo-chemical anomalies in the retina exist. I believe that the visual purple could be one of the photo-chemical stimulus-transformers for the nervous apparatus, especially the stimulus-transformer for the white sensation in the dark adapted eye. There may be a large number of such photo-chemical substances, at least six (for red, yellow, green, blue, and two for white sensation), the absorption spectra of which coincide partially, for p.e. the point of pure green varies according to the state of adaptation of the eye. As a pupil of Hering I may say that Hering has always objected to the association of his theory with the photo-chemical processes of the retina as it is only concerned with the central processes.

I am, Sir, yours faithfully,

A. VON TSCHERMAK,

Oct. 25th, 1909. Professor of Physiology in the University of Vienna.

THE TREATMENT OF ADDER BITES.

To the Editor of THE LANCET.

SIR,—The recent correspondence on adder bites has prompted me to report a case which came under my care last year.

A boy, aged 11 years, was brought to me by his mother on July 15th, 1908, at 1.10 P.M., the history being that he had been bitten by a grass snake which he had caught the previous day, and which he had handled freely until 12.55 P.M. on the 15th, when it had bitten him. When I examined him, only one-quarter of an hour after he had been bitten, I found a small pin-prick wound on the dorsum of the right index finger from which a little serum was exuding. The skin around the wound was discoloured, and the whole finger and dorsum of the hand were very œdematous. There was slight lymphangitis of the forearm, and the axillary glands formed a lump of the size of a pigeon's egg. The boy was evidently in great pain. He was pale; his pulse was 60 and of very low tension, and his temperature 98·2° F. He had vomited twice on the way to my house. I asked the mother to fetch the snake, which turned out to be a female viper, and in the meantime put on a tourniquet, and I made a deep incision an inch long through the site of the bite. The tourniquet was then slightly loosened and the patient sucked the wound for half an hour. As the boy had fainted twice and again vomited I gave him 1-100th grain strychnine hypodermically, dressed the wound with permanganate of potash crystals and wet boracic lint, and having removed the tourniquet I ordered that he should be taken home and put to bed. He was there wrapped in blankets and kept warm with hot-water bottles, brandy being administered in drachm doses every half hour until 5.30 P.M., when I visited him. He was then in much pain, the whole hand and arm greatly swollen, and the axillary glands so much enlarged that the arm could not be adducted to the side. The glands in the anterior triangle were also enlarged and tender. The pulse was 80 and very soft; his temperature was 99°. I stopped the brandy and gave another 1-100th grain strychnine, together with 1-12th grain morphia. At 7 P.M. the swelling had slightly decreased, but there was still much pain. His pulse was 48, low tension, and his temperature 100°. 20 cubic centimetres of Burroughs and Wellcome's polyvalent antivenom serum were injected into the flank.

At midnight the condition was as before, and as the patient complained greatly of pain in the arm and also at the seat of inoculation I gave him 10 grains of Dover's powder. On the following morning the boy was slightly more comfortable, the arm was less swollen but much discoloured, the glands had not decreased in size, and the whole of the right side of the thorax resembled a large black bruise. The pulse was 72, normal tension, and the temperature was 98·4°; the wound looked dirty and was discharging much clear serous fluid. I therefore ordered him to use a hand-bath thrice daily, consisting of one drachm of tincture of iodine to a pint of hot water. From this moment the swelling and glandular enlargement quickly subsided and the wound became healthy; the discolouration on the chest-wall persisted, however, for several days. It is difficult to say from a single case whether any benefit follows the use of antivenom serum, but I am inclined to agree with Dr. Sapwell that it certainly does no harm.

The points of interest in the case were: (1) the rapidity of the glandular swelling; (2) the collapse as evidenced by the low tension of the pulse, together with vomiting and fainting; (3) the extreme discolouration of the chest wall; and last, but not least, the adder's tractability during the first 24 hours of its captivity. This may, I think, be accounted for by the fact that she "struck" several times at the boy's boots while he was capturing her, and that she had thus more or less exhausted her stock of venom.

I am, Sir, yours faithfully,

MAURICE AMSLER, M.B., B.S. Lond.

Eton, Oct. 23rd, 1909.

MALARIA TREATED WITH INJECTIONS OF QUININE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Sept. 11th Dr. G. W. Young quotes three cases of malaria treated with injections of quinine, apparently being under the impression that this is a new form of treatment. I would point out that not only is this method fully described in Sir Patrick Manson's "Tropical Diseases," but also that several thousand injections are given during the year in India, as it is a favourite method of treating malignant cases, especially in the army.—I am, Sir, yours faithfully,

A. H. SAFFORD, Captain, R.A.M.C.

Fyzabad, India, Sept. 26th, 1909.

THE BENHAM TOP.

To the Editor of THE LANCET.

SIR,—In reply to Mr. C. E. Benham's letter in THE LANCET of Oct. 23rd, I may say that the fact which I have discovered is that the Purkinje phenomenon is found with small portions of the retina, and

this should be so if the explanation of the Purkinje phenomenon which I have given be the correct one. Every acute observer knows that as the day progresses and twilight approaches reds become darker and darker, and greens, blues, and violets become brighter. This is the Purkinje phenomenon. The answer to the question is that the increased sensitiveness of a portion of the retina to the green rays cannot be evident until it is stimulated by light. The three black lines do not stimulate it. The portion of the retina on which the image of the black disc falls becomes because of the altered photo-chemical action more sensitive to the green. When the top revolves the image of the first part of the white half of the disc is formed on this portion of retina and stimulates it, *with the exception of the first three black lines.* These black lines therefore appear red through contrast. This effect is only momentary. As the top revolves the retina becomes more and more sensitive to the red end of the spectrum, and so when the light is suddenly cut off by the three last black lines the portion adjacent to them becomes blue from contrast, the exact colour depending on the light adaptation produced.

I am, Sir, yours faithfully,

Hendon, Oct. 23rd, 1909. F. W. EDRIDGE-GREEN.

CHROMIDROSIS.

To the Editor of THE LANCET.

SIR,—On p. 1221 of the last issue of THE LANCET appears a reprint of an article published in your columns on Oct. 22nd, 1831, in which an account is given of a case of "The Morbid Transpiration of Blue Colouring Matter through the Skin." The case is a very good example of a very rare cutaneous affection, now known as "chromidrosis." The first case on record seems to have been one described by Yonge of Plymouth in the year 1709, and from time to time other similar cases have been recorded. It is probable that two different conditions have been confounded under the same name; in one of these the coloured excretion is undoubtedly sweat, for it has been seen to be excreted directly under observation. To this class those cases belong in which the colouration is rapidly formed, but there is another group in which a powdery greasy deposit forms on the skin. The cases in this latter class are probably examples of a coloured sebaceous secretion, for the pigmentary matter cannot be easily removed by means of water, but it is easily got rid of by ether or spirit, and it is readily proved to be composed largely of fatty material. In these cases the excretion is more gradual.

As to its etiology we know little, though here it may be mentioned that some cases of pigmentation of the skin are certainly factitious, as in the well-known epidemic at Brest, where the pigment appeared on the superficial surface of a layer of varnish with which the face had been painted. Of the genuine cases of chromidrosis it is worthy of note that the large majority are women; in one series 41 cases out of 49. In most of the cases the patients have been young unmarried women, though in one instance the patient was 57. There seems little doubt that a neurotic temperament is a great predisposing cause, and various neurotic manifestations have been described in many of the instances. The chief concurrent symptom appears to be chronic and obstinate constipation, and it has been recorded that in some cases the amount of colouration present definitely varied with the degree and duration of the constipation. Sometimes it varies at different times of the day, and there seems some reason to think that some relation exists between it and menstruation, for it has been seen to be more well-marked just before a catamenial period, diminishing in severity after it.

As to the exact pathology of the condition, there is not much to be said, but as in some cases at least the pigment has given the chemical reaction of indigo, it is not improbable that the condition is sometimes caused by the absorption of indican from the alimentary canal. Stott has described two cases in one family who suffered from pink perspiration sufficient to stain the clothes; in these cases he isolated a yeast, but it is probable that these cases belong to an entirely separate class. The case reported in THE LANCET in 1831 was in a girl of 16 years, and the pigmentation was of a beautiful blue colour. Curiously the account does not mention whether the patient suffered from constipation or not.

The treatment to be followed in these cases is practically limited to relieving any constipation that is present and correcting any menstrual irregularity. If there is any foundation for the idea that the colouration is due to the absorption of decomposition products from the alimentary canal, it is clear that treatment directed to ameliorating the bacterial condition of the bowel would be likely to be followed by an improvement in the condition of the skin.

I am, Sir, yours faithfully,

Oct. 25th, 1909. F.R.C.S.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

FOLLOWING the example of older universities honorary degrees have been conferred upon a number of gentlemen and one lady eminent in science, literature, statesmanship, medicine, and other walks of life. The ceremony was to have taken place when the new buildings were opened by the King last July, but it was decided that the two functions should be separated. The ceremony on Oct. 20th was of sufficient importance to stand on its own basis. The degrees were conferred by the Vice-Chancellor, Alderman Beale, in the absence of the Chancellor, Mr Chamberlain. The customary oration was made by the Principal, Sir Oliver Lodge, in making the various presentations. The six honoured members of our profession were: Sir Richard Douglas Powell, Bart., President of the Royal College of Physicians of London; Mr. H. T. Butlin, President of the Royal College of Surgeons of England; Dr. J. S. Haldane, Reader in Physiology to the University of Oxford; Professor B. C. A. Windle, President of University College, Cork; Mr. C. S. Tomes, the distinguished dental surgeon; and Dr. Arthur Shadwell, the well-known writer on economics. The other honorary graduates were: The Chancellor (*in absentia*), Mr. W. N. Atkinson (H.M. Inspector of Mines for South Wales), the Right Hon. A. J. Balfour, the Bishop of Birmingham, Professor Bosanquet, Mr. Andrew Carnegie, Sir William Crookes, Mr. Maurice Fitzmaurice, C.M.G., Sir Archibald Geikie, the Right Hon. R. B. Haldane, Dr. J Rendel Harris, Sir Charles Holcroft, Bart., Mr. G. J. Johnson, Sir Alexander Kennedy, Professor Sir Joseph Larmor, the Right Hon. Walter Long, Professor Gilbert Murray, Sir William Ramsay, Lord Rayleigh, Professor Rutherford, Mrs. Sidgwick, Lord Strathcona and Mount Royal, Professor Silvanus Thompson, Professor Tilden, Sir J. J. Thomson, Dr. T. H. Warren (President of Magdalen College, Oxford), and Viscount Wolverhampton.

City Aid Society.

In the annual report of this society which has just been issued the question of coöperation with the hospitals has been considered, especially with regard to the better means for distributing hospital tickets and the method of dealing with out-patients. In conjunction with representatives from the chief hospitals the method of advancing the following principles has been discussed—viz., (1) the elimination of applicants well able to pay for medical assistance; (2) discrimination in the number of those whose ailments would be more suitably treated by a provident dispensary, the Poor-law, or some other agency. It was decided, as a practical start, that, when possible, this society should appoint an almoner to attend at one of the hospitals and take charge of such cases as may be referred by the medical staff as being cases which could be attended to efficiently at home or by some other institution.

Oct. 26th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Additions to the Cardiff Infirmary.

WHEN the Cardiff Infirmary was founded in the year 1837 the population of the town was a little over 10,000. In the early days of the institution about 80 in-patients and 1000 out-patients were dealt with. By 1880 these numbers had increased to 500 and 7000 respectively and the population of the town was considerably over 80,000. It was therefore decided to erect new buildings, and in 1884 the present

buildings were opened with accommodation for 108 patients. The rapid increase in the size of Cardiff, where in 20 years the population was doubled, together with the large increase in the population of the surrounding colliery districts, has necessitated further enlargements of the institution in which there is at the present time accommodation for 194 patients. When it is remembered that the infirmary serves not only the town of Cardiff but a population greater in the aggregate than Cardiff itself dwelling in the Rhondda, Aberdare, and Merthyr valleys it is not surprising to find that the number of patients seeking admission far outnumbers the accommodation available. It became, therefore, advisable some two years ago to erect an additional wing to accommodate 78 beds, and the estimated cost of £30,000 was contributed within nine months of the appeal for it having been made. The foundation-stone of the new wing was laid on Oct. 20th by Mrs. John Nixon, who has contributed 10,000 guineas for the endowment of one ten-bed ward. It is gratifying to find that not only has the entire cost of the new building been provided, but a sufficient sum has already been contributed to maintain nearly one half of the additional 78 beds, and before the completion of the building it is confidently anticipated that many more beds will be endowed.

Housing in Monmouthshire.

The sanitary condition of the colliery districts of Monmouthshire has received a great deal of attention from the medical inspectors of the Local Government Board during recent years, but in spite of the recommendations which from time to time have been made by the Board to the various district councils concerned very little improvement appears to take place in the housing conditions. A report has recently been made by Dr. D. Rocyn-Jones, the county medical officer of health, to the sanitary committee of the county council upon the conditions which prevail in Abersychan, a district with about 20,000 inhabitants adjoining Pontypool. The story which has been related of other parts of the county is repeated with regard to Abersychan: houses are built back to back, or, worse still, back to earth, without damp courses and without proper rainwater gutters, so that dampness of the dwelling is doubly ensured; cellar dwellings and basement houses which it is impossible to ventilate properly are still in occupation, and in some instances overcrowded. The district council has been sufficiently progressive to appoint a lady health visitor, but she must find the difficulties of her work very considerably increased in the presence of the large number of structural defects which are enumerated in Dr. Rocyn-Jones's report.

Barry Accident Hospital.

The urban district council of Barry has provided for the inhabitants of that town not only the ordinary municipal institutions such as public slaughter-houses, a refuse destructor, and isolation hospitals, but for some years has supported out of the rates a small accident hospital. Until recently the premises used for this purpose were an ordinary dwelling house slightly altered to suit the particular purpose to which it was put, but there has now been erected a special building suitably arranged and well equipped so that the usefulness of the institution will be very much increased. In the old building the surgical staff included a few of the medical practitioners in the town who gave their services without any remuneration, but after much discussion on the subject the district council has now decided that the whole of the medical men in the town shall be on the staff of the new hospital, four being on the rota for four months. It is proposed that each shall be paid an honorarium of £10.

Oct. 26th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Late Professor D. J. Cunningham's Library.

IT was intimated at the last meeting of the Edinburgh University Court that the late Professor Cunningham had by his trust deposition and settlement directed his trustees to make over to the University of Edinburgh all his medical and scientific books to form the nucleus of a library for the anatomical department.

The Liston Victoria Jubilee Prize.

The Royal College of Surgeons of Edinburgh have awarded the Liston Victoria Jubilee prize to Mr. Robert Jones of Liverpool. The prize was awarded by the council to the Fellow or Licentiate of the College "for the greatest benefit done to practical surgery since 1905."

The Teaching of Surgery in Edinburgh.

The University Court has appointed Professor H. Alexis Thomson, professor of surgery in the University, a lecturer and examiner in clinical surgery. This is the continuance of the arrangement made during the later years of Professor J. Chiene's tenure of the chair of systematic surgery. By the older arrangement the holder of that chair, although he had wards in the Royal Infirmary, was not allowed to teach clinical surgery. This curious rule was the survival of an old order of things which should have been broken through long before it was. The chains which bind the Scottish universities are seen in the necessity to formally appoint the professor of systematic surgery to a lectureship of clinical surgery to make his wards available for clinical instruction.

The Royal (Dick) Veterinary College, Edinburgh.

For some time past a scheme has been on foot for the transference of the Royal (Dick) Veterinary College, Edinburgh, from the premises it has occupied in Clyde-street for many years. These premises have long been inadequate for the modern developments in the teaching of veterinary medicine, but the difficulty in finding a suitable site for the school and the want of funds have been a heavy drag upon those who were interested in the efficiency and development of the College. It has just been announced, however, that the Scottish Education Department had decided to recognise the College as a central institution under the Education Act of 1908 and to provide £25,000 towards the cost of new buildings, a similar amount requiring to be raised locally. It is intimated that a site which has been spoken of for some time as suitable, and which is situated at the north-east corner of the Meadows, has been secured and plans of the proposed buildings have been prepared. The site is conveniently near the University and the medical buildings. It is hoped that the requisite money will soon be found for a scheme which is so thoroughly deserving of generous support.

A Memorial to Professor Liston.

A memorial window to Professor Robert Liston, who died in 1847, has been unveiled in the parish church of Ecclesmachan, his birthplace, by Professor Alexis Thomson. The window is the gift of members of the great Scottish surgeon's family and of members of his profession.

The Fate of Sidlaw Sanatorium.

A meeting of the directors of the Sidlaw Sanatorium was held on Oct. 21st, when the position brought about by the intimation that most, if not all, of the directors contemplated resigning was under review. There was a full attendance, and it was resolved to hold a meeting of the supporters of the institution next month, when its whole affairs will be discussed and future action resolved upon. It is understood that for several years the institution has been carried on at a considerable loss, the deficiency until now being met by one of the directors, who has specially interested himself in the institution. The financial position is said to have suffered through the late agitation for the municipalisation of the sanatorium, and the situation with regard to its maintenance and continuance under its present constitution has reached an acute stage.

Handsome Gift to Montrose Infirmary.

A special meeting of the managers of Montrose Asylum and infirmary board was held in the town buildings on Oct. 21st. The treasurer submitted a letter from Mrs. Wyllie, 3, King's-gardens, Hove, Brighton, intimating a donation to the funds of the infirmary of £5000 in memory of her husband, who was a native of Montrose. The convener of the infirmary house committee moved that they record their heartiest thanks for the gift. It was the largest donation the infirmary had ever received, and the quiet and unostentatious way in which it had been made added to its value. A number of years ago they had a bequest from Dr. David Wyllie, and now they had the widow of a brother remembering them in that way.

The New Principal of the University of Aberdeen.

The King has been pleased, on the recommendation of the Secretary for Scotland, to approve the appointment of the Rev. George Adam Smith, M.A., D.D., LL.D., Professor of Old Testament Language, Literature, and Theology at the United Free Church College, Glasgow, to be Principal of the

University of Aberdeen, to fill the vacancy occasioned by the death of the Very Rev. John Marshall Lang, D.D. The new Principal is a son of Dr. George Smith, C.I.E., at one time editor of the *Friend of India*. He was educated at the Royal High School, Edinburgh, and at the University of Edinburgh, where he graduated M.A. in 1875. In 1892 he was appointed to the professorial chair which he now vacates. In April, 1893, the University of Edinburgh conferred on him the honorary degree of D.D., and in 1895 he received from the Senatus of the University of Aberdeen the honorary degree of LL.D. Principal Smith has made many valuable contributions to ecclesiastical literature, and the appointment will be a very popular one in Aberdeen. Principal Smith is married to a daughter of Sir George Buchanan, F.R.S., late medical officer to the Local Government Board.

Dingwall Isolation Hospital.

The new Isolation Hospital, erected at Dingwall in connexion with the Ross Memorial Hospital, has been formally opened by Lady Munro of Foulis. The usefulness of this institution has grown steadily since the erection of the first group of buildings in 1873, the extension now opened being rendered necessary by the number of fever cases sent in by the local authorities. Dr. W. Bruce, medical superintendent, introduced Lady Munro, and stated that since its opening, 3000 cases had been treated in the institution, including 140 major surgical cases, and 626 fever cases. The hospital depends entirely on public recognition for its support, but excepting £600 due on account of the balance of the cost of the new isolation building it is free from debt, with an endowment fund of £3000.

Oct. 26th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

University College, Dublin.

THE Dublin Commissioners who were appointed by the Irish Universities Act, 1908, held a meeting on Oct. 23rd in the Senate Room of the Royal University Buildings, Dublin, to consider the appointments to the vacant offices in University College, Dublin, and the representatives on the governing body of the College. The names of certain Fellows of the Royal University were selected and recommended to the Joint Committee for appointment, in accordance with the Act, to the various professorships and lectureships in the new University. The list of names of those who have just been recommended to or appointed to professorships in the Medical Faculty is as follows, and in many instances coincides with anticipation: Dr. George Sigerson, zoology; Dr. E. P. McLoughlin, anatomy; Mr. J. S. McArdle, surgery; Dr. B. J. Collingwood, physiology and histology; Dr. E. J. McWeeney, pathology and bacteriology; Dr. J. N. Meenan, hygiene and medical jurisprudence; Dr. Martin Dempsey, materia medica and therapeutics; Sir Christopher Nixon, medicine; Dr. Alfred J. Smith, midwifery and gynæcology; Mr. J. J. Dowling, physics; Mr. J. Bayley Butler, botany; Dr. L. Werner, ophthalmology; Mr. E. L. Sheridan, dental surgery; and Mr. J. L. Potter, dental mechanics. Dr. Collingwood, who has been lecturer on physiology at St. Mary's Hospital, London, is the only imported professor.

The Women's National Health Association of Ireland.

Nearly 100 members of this flourishing association from all parts of the country attended the recent autumn meeting in Dublin at which the Countess of Aberdeen took the presidential chair. Reports of the various sections of the association's work showed, among other details, that babies' clubs, known elsewhere as schools for mothers, have been established at Dublin, Belfast, Cork, and Londonderry, and that in connexion with the clubs classes in home nursing and sick aid have been largely attended by the elder girls. A pasteurised milk depot has been established in Dublin showing most excellent results in saving infant life. Schemes for providing and distributing pure milk from healthy cows have been carried out in various parts of the country, including Belfast, Armagh, Carlow, Killarney, and Cork. Five regular health lecturers have given courses of lectures in all parts of the country, in addition to those provided by local branches and lectures provided by the kindness of the medical profession. 32 extra district nurses have been appointed in Ireland during the last 18 months through the means of the Women's National Health Association. The Samaritan and Nourishment Funds have done useful work, and the first of the disused Coastguard stations taken over by the association was opened as a health home for preventive cases on August 4th, and since then has received 34 inmates who have all much improved in health. They come from families where they have been exposed to infection from tuberculosis, but are certified free from the disease themselves before admission. In the early part of the year the Tuberculosis Exhibition visited several districts in Ireland, closing with visits to three different quarters in Dublin, where it was visited by enormous crowds of people and where the lectures were so crowded that hundreds had to be turned away every evening. The Tuberculosis Exhibition caravan, designed to meet the need of outlying places too poor to undertake the expenses of a visit from the exhibition, has proved a very successful scheme. It has travelled all round Donegal and is now working in the west of Ireland. A refreshment van selling pasteurised milk and other nourishing and wholesome foods and drinks has been established by the association in the Phœnix Park, Dublin, during the last few weeks especially for the benefit of the football players and has met with a very hearty welcome. About 3,000,000 leaflets, pamphlets, pictures, posters, and literature of all kinds have been published and distributed during the last two years. A series of three volumes entitled "Ireland's Crusade against Tuberculosis," and containing a collection of valuable lectures by leading medical men and other experts on subjects connected with the prevention and treatment of tuberculosis, has been published by Messrs. Maunsel at 1*s.* each, and copies of the same have been sent free to a large number of persons who are in a position which enables them to promote the anti-tuberculosis campaign. A generous donation for the publication and distribution of these educational volumes and other similar literature has been given by the Vice-President and Council of the Department of Agriculture and Technical Instruction. *Sláinte*, a monthly magazine dealing with health subjects in a popular way, is also published by the association., and has helped to disseminate valuable hygienic information.

The Late Professor Cunningham.

A meeting of friends and former pupils of the late Professor D. J. Cunningham will be held by permission of the Provost in the Medical School, Trinity College, on Nov. 3rd, at 4.30 o'clock, to take steps to establish in the school a memorial of his connexion with Dublin University.

The Health of Belfast.

At a meeting of the public health committee held on Oct. 21st it was reported that the death-rate from all causes was 14·0 per 1000. There is an increase in the notifications of scarlet fever. It was announced that the Belfast corporation is about to promote an improvement and reconstruction scheme under the Housing of the Working Classes (Ireland) Acts, 1890–1908. The main object of the scheme will be to clear certain unhealthy areas and to provide suitable sites for building houses for the working classes. These houses need not necessarily be built by the corporation; in fact, it is probable that the corporation will let the land for building purposes. In these circumstances the Belfast corporation asked the Local Government Board whether it would admit a claim on the part of the corporation to a share in the Irish Housing Fund referred to in Sections 4 and 5 of the Housing of the Working Classes (Ireland) Act of 1908. In reply, the Local Government Board said that it had not had an opportunity of examining in detail the proposals of the corporation, and that, further, it was not in a position to determine whether the scheme contemplated was of such a nature as would entitle the corporation to a contribution from the Irish Housing Fund in accordance with the sections of the Act quoted by the corporation.

Floods in Belfast.

A rainstorm of tremendous force broke over the north of Ireland on Oct. 23rd, and prevailed throughout the entire day, resulting in severe floods in Belfast and all parts of Ulster. All the low-lying parts of Belfast were badly affected, the drainage system being quite unfit to deal with the enormous volume of rain—1·48 inches. As a result, in Grosvenor

Hall, where a meeting was being held on Saturday night, the people had to leave within half an hour of the opening by a backway, owing to a great part of the buildings being surrounded by water. At the Hippodrome Music Hall the orchestra was swamped and the bandsmen's seats had to be placed on boxes, while the stage door was unapproachable.

A Liberal Workhouse Officer.

At the weekly meeting of the Lisnaskea (county Fermanagh) board of guardians held on Oct. 23rd, the master said the members would be surprised to hear that a female patient drank ten glasses of champagne, three glasses of a medicated wine, and two glasses of brandy in one day. She also took two eggs and three pints of milk on the same day. She died shortly afterwards. The guardians agreed that the medical officer had full power to order whatever he liked for a patient in hospital and the chairman said no pains were spared to save this woman's life. But the amount of stimulants seems very large.

Oct. 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Sanitary Regulations regarding Oysters.

WITH a view to preventing the sale of unwholesome oysters the Under-Secretary of State for the Navy has ordered a commission appointed under the presidency of the Inspector-General of Fisheries to draw up sanitary regulations regarding oyster culture. The regulations will define the condition in which the beds, pools, and reservoirs used for this purpose must be kept. Owners of oyster beds not complying with the prescribed conditions will only have permission to deal in half-grown oysters; in other words, they will not be allowed to supply consumers. In places where oysters are brought to maturity the licence granted by the Minister of Marine will be withdrawn if the regulations are not observed.

Albuminuric Bronchitis and Pulmonary Catarrh.

At a meeting of the Société Médicale des Hôpitaux held on Oct. 8th M. Bezançon and M. de Jong called attention to the confusion which existed between the conditions known as pulmonary catarrh, albuminuric bronchitis, and even pulmonary œdema. In their opinion, the expectoration in these diseases was of three types—namely, (1) the true sero-albuminous expectoration of pulmonary œdema; (2) hydro-mucous expectoration consisting of water and mucine; and (3) mixed expectoration with predominance of the hydro-mucous type, occasionally containing albumin and leading to confusion with pulmonary œdema. In reality the question was one of bronchial hypersecretion in relation to chronic bronchitis. This bronchial hypersecretion occurring in patients suffering from emphysema associated with cardio-renal disease had perhaps some connexion with urinary elimination. In a patient whose case was followed for a year M. Bezançon and M. de Jong were able to observe a complete parallelism between the quantity of hydro-mucous expectoration and the quantity of urine. Under a chlorine-free dietary the expectoration diminished but it increased again when a diet containing chlorides was tried, and at the same time there was free elimination of a chloride in the sputum. Under the influence of digitalis the urine and the sputum increased. When theobromine was given there was an increase of the expectoration only, this being accompanied by cough and dyspnœa, which caused so much pain by irritation of the bronchial glands that the drug had to be stopped.

Etiology and Treatment of Vertical Displacement of the Stomach.

M. Gayet has had an opportunity of observing very marked vertical displacement occurring in a man, aged 50 years, who had for a long time suffered from gastric pain, and this case formed the subject of a paper read by M. Gayet at the twenty-second French Congress of Surgery held at Paris from Oct. 4th to 9th. The pylorus descended to the pubes on the left of the abdomen. The patient, who was the subject of tetany and delusions of inanition, vomited continually and was very emaciated. A complicated operation was performed, consisting in transmesocolic gastro-enterostomy, completed by jejuno-jejunostomy. After gastroplication, in which the stomach was folded and kept in position by a series (*surjet*) of silk stitches, its anterior surface was sutured to the abdominal wall in such a way as to restore the organ to its normal position (gastropexy). The patient made an uneventful recovery; when seen eight months afterwards it was found that he had become fat, had gained 17 kilogrammes in weight, and digested his food quite well. In the course of the operation it was noticed that the thorax was narrowed in a wasp-like shape, that the liver was small and in the middle line, and that the normal hepatic space was occupied by a portion of the transverse colon. From all this it might be concluded that the wearing of corsets, so often said to be the cause of downward displacement of the viscera, was not always to blame, and that congenital defects had much to do with the pathogenesis of the condition. The treatment was unavoidably complicated, with a special necessity for attention to the sutures in the upper part of the abdomen.

International Congress for the Repression of Fraud.

The Second International Congress for the Repression of Fraud was held in Paris from Oct. 17th to 24th. The first Congress, an outcome of the Universal Society of the White Cross, was organised in Geneva in 1907 and was held in that city in September, 1908. Its object was to promote international action for the prevention of fraud in connexion with food and drugs, and in the realisation of this ambitious programme to bring together manufacturers, merchants, producers, and men of science. Its work commenced with an attempt to define products which were commercially pure. This first Congress received from all countries a welcome so hearty that 21 Governments replied to the invitation of the White Cross, and about 600 members met at Geneva. During this Congress there was only time to define commercial purity as regards alimentary substances, and the examination of the processes requisite for the preparation of food was adjourned to the following Congress which has now closed. The general opening meeting took place in the large *amphithéâtre des travaux pratiques* of the Faculty of Medicine under the presidency of the Minister of Agriculture, who in a speech which was much applauded expressed an earnest hope that the Paris Congress would worthily continue the work which had been begun in Switzerland. He dwelt on the necessity for conscientious producers and merchants coming to an understanding with persons possessed of technical knowledge for the purpose of defining commercial purity as regards alimentary substances and of drawing up a list of the legitimate processes necessary for their further preparation. In the next place commercial requirements had to be adjusted to the claims of public health. In conclusion, the Minister reminded his audience that it was necessary to appeal to legislators who would complete the work of the Congress by making its conclusions the basis of international arrangements. M. Vuille, President of the Universal Society of the White Cross, then thanked the members of the French Government and the Presidents of the Municipal Council of Paris, and the General Council of the Seine, who had taken the Congress under their patronage. In the next place he gave an account of the work undertaken by the White Cross from the closing of the last Congress up to the present time. M. Bordas, President of the Second Congress, explained the details of the official programme—i.e., the examination of the processes necessary in the preparation of alimentary substances in a state of commercial purity and the definition of the primary materials of pharmaceutical and chemical products. The Paris Congress would therefore do what it had been necessary to leave undone at Geneva, and would undertake the drawing up of a list of legitimate operations for the preparation of food. For instance, as a definition of pure wine, it was not enough to say that it was the product of fermented grape juice, but the various processes employed by the producers before delivering the fermented grape juice to the consumers must be enumerated. The French Section of the White Cross of Geneva asked all the mercantile and manufacturing associations to supply it with definitions in respect of each of the alimentary substances prepared or manufactured in France, and after a very careful examination of these documents a series of resolutions would be drafted and submitted for the approval of the Congress.

Oct. 26th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Infantile Paralysis.

INFANTILE paralysis has for some time been assuming an epidemic character in certain districts of the Rhenish province and Westphalia, as mentioned in this column on Oct. 2nd, and the disease has now increased so much that the Government has asked Professor Krause, the director of the Medical Clinic of the University of Bonn, to inquire into the matter. Epidemics of the disease have already been observed in Norway, Sweden, New York, and Vienna, while in Germany sporadic cases, sometimes occurring in groups, have happened every year. In his report, which has been published in the *Deutsche Medizinische Wochenschrift* of Oct. 21st, Professor Krause deals especially with the present epidemic in Westphalia. He states that the first case occurred in the town of Hagen in the beginning of the month of June, from which date the number of patients increased till August, and since that time recent cases were also met with in September and October. Until Oct. 5th, in the very populous district of Arnsberg, including large manufacturing towns such as Bochum, Dortmund, and Hagen, 436 cases and 66 deaths were registered. The age of the youngest child attacked was 4½ weeks and that of the eldest was 15 years, but the majority of cases occurred in children of 2 years of age and of the female sex. Professor Krause recognised two stages of the disease. The first was that of general symptoms, in which pyrexia, perspiration, and troubles of the gastro-intestinal canal were the principal features; diarrhœa was more frequent than constipation, and it was remarkable that at the same time diarrhœa usually attacked other members of the family. It is impossible in this stage to say whether paralysis will develop or not. The children, however, complained of pains in the vertebral column, the neck, and the limbs. On puncture of the spinal canal the cerebro-spinal fluid was discharged under high pressure (from 135 to 140 millimetres of mercury). It was limpid, alkaline, and showed an albuminous reaction. The second stage was that of paralysis; it began, as a rule, with high fever lasting for one or two days, together with acceleration of the pulse and respiration. The paralysis affected first the muscles of the neck, so that the head was drawn backwards or to one side; then the dorsal or abdominal muscles were implicated, so that both the erect and the sitting position became impossible; and finally one or both arms or legs, and sometimes also one side of the face, were paralysed; once an isolated paralysis of the abducens nerve was observed and paresis of the respiratory muscles was present in severe cases. The sensorium was, as a rule, not affected. The paresis might disappear within a relatively short time—from several days to three weeks, but a paralysis of one or both of the limbs usually persisted; in a number of cases, however, the paralysis completely disappeared. The paralysis was of a completely atonic kind; only once a spastic contraction of the right leg was observed; the tendon reflexes had disappeared, whilst the cutaneous, abdominal, and cremasteric reflexes were present. Sensibility was impaired in only one case in which complete anæsthesia was present for two weeks. Post-mortem examination was made in eight cases, the result being that a relatively slight leptomeningitis with circumscribed dull foci was observed. The most striking alteration was, however, present in the gastro-intestinal canal, which showed hyperæmia and swelling of the mucosa, together with enlargement of the mesenteric glands and of the spleen. With regard to the place of entrance of the virus into the system, Professor Krause was of opinion that it must be the gastro-intestinal canal. The nature of the virus is not yet known and nothing has been ascertained as to the manner in which infection is conveyed; it is probably carried by the food, although a great many suckling infants were among the patients. Fruit was alleged by some to be the cause of the disease, and others attributed it to insect pests, but without any apparent ground in either case. A remarkable incident was that together with the epidemic of paralysis an enormous mortality was present among chickens, especially the younger ones. A man reported that two of his chickens had died with paralytic symptoms, in a third one the paralysis was said to have occurred but to have subsequently disappeared; the post-mortem examination of this bird showed nothing abnormal. The disease may certainly be communicated from one person to another by healthy carriers of bacilli. In the acute febrile stage isolation of the patients is necessary and also disinfection of their dwellings, as in several instances the disease broke out in a family when they had moved to a house where cases of paralysis had happened. To remove the virus from the gastro-intestinal canal the administration of castor-oil or calomel was advisable and the diet must be regulated. Against the general infection inunction of Credé's ointment containing silver might be tried; sometimes the paresis disappeared after puncture of the spinal canal in the lumbar region. The bacteriological examinations made by Professor Krause, in conjunction with Dr. Meinicke, chief of the Hagen municipal laboratory, had no result. Micro-organisms of various kinds were found in the bowels and the urine, but proved to have nothing to do with the virus. The other organs and the fluids of the body were free from bacteria. Attempts were also made to communicate the disease to animals by the inoculation of pieces of organs or fluids obtained from the patients. Mice, guinea-pigs, chickens, and pigeons remained quite healthy, but rabbits were killed in several instances by the inoculation of brain, spleen, or blood; the death occurred sometimes with cerebral symptoms and after a relatively long period of euphoria.

Prosecution for Misdescription in a Medical Certificate.

A medical man in Berlin has recently brought himself into serious trouble while intending to do a kindness to a patient. He attended a girl who was employed in the State telephone service and became pregnant, but had an ordinary miscarriage. As she had therefore to be off duty for some time it became necessary for her to produce a medical certificate. She implored her medical attendant to conceal her state, as otherwise she would at once lose her appointment, and for this purpose to enter some other cause of illness on the blank form. This he accordingly did, stating that the patient suffered from influenza. By accident the truth became known to the authorities, and the medical man was prosecuted on the charge of having wilfully given a false medical certificate, an offence punishable by imprisonment. Before the court it was stated that the defendant had been induced to commit this irregularity by his good nature only and not for any financial profit, but he was nevertheless found guilty and sentenced to the minimum punishment of one month's imprisonment. The case was discussed in the daily press and it is expected that the Sovereign will exercise his prerogative of mercy. In some newspapers it was argued that the present law should be altered because it does not make any difference as to the motives of the defendant, punishing equally a medical man who acted from generous motives and one who made a trade of giving false certificates for money. Regret has also been expressed that the accused did not come before a jury who would certainly have found a verdict of not guilty, but came before three judges who, according to the strict terms of the law, found that he had committed an illegal action. It is hoped that the Berlin medical chamber will petition the Crown to pardon the culprit who is known as a respectable medical man of good standing.

Oct. 25th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Typhoid Fever Traced to Milk-supply.

INFECTED milk and defective sanitary conditions are shown by Dr. Schiller, district medical officer in Cseffa (Hungary), to be the cause of the prevalence of typhoid fever in his district during the past few weeks. Only filtered water was used in this district, and Dr. Schiller, in his report, says that, in his opinion, the unusual number of cases of typhoid fever notified was not due to the water-supply, for, if so, there ought to have been a corresponding increase in the neighbouring district also as it received essentially the same supply of filtered river water. This, however, was not the case, and all the evidence points to the

accidental infection of two large dairy farms as the probable cause of the sudden outbreak. Dr. Schiller adds that unless certain defective sanitary conditions now existing in the district be corrected, a repetition of this accident may be expected, in spite of the fact that the water-supply is of good quality. The official bacteriological analysis of this water made at brief intervals during the last six weeks or more points to nothing that would suggest the water in any way to be faulty. The investigation of the milk-supply showed that households which afterwards suffered from typhoid fever since August 15th had in most cases purchased their milk from the same dairyman. Two cases of typhoid fever are known to have developed at his home. As milk is one of the best vehicles for the conveyance of the infection of typhoid fever, it is reasonable to suspect that the disease in the district in question was due to the use of milk accidentally infected on the premises of the dealer in whose family a case existed. As to the general sanitary condition of the towns in Hungary, the Chief Sanitary Superintendent says that many of the houses have no connexion with the street sewers, their facilities for drainage and disposal of waste being over the surface and into the cesspools located in the back yards. There is also a conspicuous lack of sewage facilities in some parts of Budapest. A number of streets have no sewers under them, particularly in Buda, the ancient part of the capital, and in a very large number of houses located in many instances on streets having sewers the house-drains are not connected with the sewers. With the continuation of conditions of this kind it would be surprising if epidemics did not occur from time to time.

The Use of Gelatin as a Hæmostatic.

Dr. Pfeiffer has published his recent clinical experiences in the treatment of hæmorrhage by rectal injections of gelatin. The cases which he has observed were 23 in number, comprising 16 of hæmoptysis in pulmonary tuberculosis, 4 of gastric ulcer, and 1 each of epistaxis, pulmonary infarct, and purpura hæmorrhagica. The method was as follows: A solution of 15 grammes of gelatin in 150 cubic centimetres of hot water was allowed to cool to the temperature of the body and then injected under slight pressure as high as possible into the colon. These injections were given from one to three times daily and were usually well retained, no evidences of gelatin being visible in the stools. Even after the bleeding has stopped it is well to continue the enemata once daily for several days. The results in many of the cases were quite remarkable. In some of them the bleeding came on again, when the treatment was stopped too soon, but on its being resumed, the bleeding ceased at once. In a few cases the results were negative and in some the effects were not well marked. This uncertainty was also found when the gelatin was injected subcutaneously. The rectal injections are not, however, attended by unpleasant complications; they are free from the dangers of infection and are quickly and readily applied. These advantages may be considered of sufficient importance to warrant the substitution of the rectal for the subcutaneous method.

Oct. 25th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending Sept. 18th show 2353 deaths, compared with 2096 in the preceding week. The Bombay Presidency reported 693, Madras 185, Bengal 58, the United Provinces 353, the Punjab 68, Burma 42, the Central Provinces 596, Mysore State 169, Central India, 109, and Rajputana 60.

The Health of Bombay City.

As was to be expected, the return of rainy weather, driving the poorer people from the open air into their unwholesome houses to sleep, has checked the promising decline of plague in Bombay. The returns for the week ending Sept. 21st show a total of 12 deaths, as against 9 in the preceding week, and the daily figures show a slight upward tendency. Last year's record for the corresponding week was 26 deaths, and the quinquennial mean 34, so there is still room for hope that we may achieve what has never happened yet since plague first appeared—a clean sheet in Bombay for a whole week. The deaths from cholera for the same week were 20, another figure which shows an upward trend, although there appear to be fewer imported cases than usual. The total mortality in the city shows a distinct improvement, having gone down to 578 for the week, as against 591 in the previous seven days. The improvement on the five-yearly mean of 640 is considerable, but last year's figure was only 561. The question of safeguarding the milk supplies of the city is still far from being satisfactorily settled in Bombay. Several wise measures which the executive health officer has pressed upon the corporation are still unadopted, and Dr. J. A. Turner is now trying to solve the problem piecemeal by suggesting the establishment of municipal pure milk depôts, for the benefit of babies, as a beginning.

The Malaria Conference.[1]

In addition to the officers recently mentioned, the following will attend the Malaria Conference at Simla on Oct. 11th: Surgeon-General F. W. Trevor, Principal Medical Officer of His Majesty's Forces in India; Colonel C. P. Lukis, I.M.S., officiating Director-General, Indian Medical Service; Lieutenant-Colonel J. T. W. Leslie, I.M.S., Sanitary Commissioner with the Government of India; Lieutenant-Colonel D. Semple, R.A.M.C., Director of the Research Institute; Lieutenant-Colonel A. R. Aldridge, R.A.M.C.; Lieutenant-Colonel J. Thornhill, Indian Army, Inspecting Officer of Cantonments; Major S. P. James, I.M.S.; Captain S. R. Christophers, I.M.S.; Major C. Donovan, I.M.S., Professor of Philology, Medical College, Madras; Diwan Bahadur Narayane Murti Pantulu Guru and an administrative officer still to be nominated from Madras; Lieutenant-Colonel T. E. Dyson, I.M.S., Sanitary Commissioner; Mr. Lawrence, Collector of Sukkur; Mr. J. A. Wadia from Bombay; Mr. Maude, Commissioner, Patna; Major Leonard Rogers, I.M.S., and Rai Kissori Lall Goswami Bahadur from Bengal; Mr. Ferard, Commissioner, Allahabad; Major J. Chaytor White, I.M.S., Sanitary Commissioner; and the Hon. Pandit Sunder Lall from the United Provinces.

British Troops and Malaria.

Orders have been issued that British troops now in hill stations are not to move to the plains until Nov. 15th, and where malaria is reported in cantonments the movement is to be delayed until Nov. 30th. The extra time in the hills may be employed in local manœuvres, provided these do not interfere with subsequent divisional manœuvres. The troops should benefit materially by their longer stay in the more bracing climate of the hill stations.

Sept. 24th.

CHINA.

(FROM OUR OWN CORRESPONDENT.)

Journey through Shan-si.

I RETURNED last week from a journey of over 1000 miles by road, river, and rail in Shan-si, an important province in which, up to last year, the largest amount and the best quality of opium were produced. Shan-si opium was prized all over the Empire by smokers as well as for medicinal purposes. As the result of particular inquiries and observations, I am able to say that a determined campaign has been prosecuted by the officials and that the output has not only been very materially reduced but that the people are finding great difficulty in continuing their indulgence in the pipe. Itinerant merchants sell the drug, but under difficulties, and opium smoking is now become a vice that can only be followed out secretly and circumspectly instead of being, as before, a habit that was not regarded among the people as a vice. Some of the wealthier families have laid in a stock of opium that will last them for years, but the enhanced price is now beyond the means of the poorer classes, and there are no new smokers among the younger generation. In Shan-si until recently women smoked freely as well as men. One can still see in the sallow, anæmic faces of many men in the towns traces of

[1] We published last week the outline of the recommendations arrived at by the Conference, which reached th's country by telegram. (See THE LANCET, Oct. 23rd, p. 1231.)

their years of indulgence. The rough-and-ready cure of stoppage of supply was referred to feelingly by several natives to whom I spoke. Thus, as far as Shan-si is concerned, the predictions of those who had studied the question among the Chinese, and knew how deep was the narcotic hold the drug had taken of the people, appear to be falsified. But any relaxations on the part of the officials for some years to come will find the people ready to relapse, as they are non-smokers now only by force of circumstances. Anti-opium pills are in extensive use, and there is good reason to believe they are of the nature I have indicated in previous notes. The use of morphia in hypodermic syringes seems to be mainly confined to the coast ports, and it is almost unknown in the country towns and villages. Throughout the whole journey I did not remark a single case of alcoholic intoxication. In all this vast tract of country through which I travelled, with the exception of one town, Taiyuanfu, I did not meet any Europeans, missionary or otherwise, and there is here a wide field for foreign medical work. There were many demands for treatment, which I was rarely able to give. Rheumatism is not uncommon among the older people; there were many cases of dyspepsia, mainly due to intestinal parasites and the bolting of food; eczema and "itch" are common in the towns, and tuberculosis and trachoma are widespread. In every village there were many cases of this last disease, for which the native pharmacopœia has no antiseptic check. It leaves in its trail blindness, entropion, and corneal opacities. In some of the larger towns, such as Kuei-hua-cheng, where there is a rich mercantile community in a population of over 80,000, a remunerative practice awaits the first foreign doctor, a knowledge of the dialect being, of course, a necessity. Foot-binding is *de rigueur* among Shan-si women and the feet are bound smaller than in other provinces. In most cases the binding is so tight that the women appear to be walking on amputated stumps. Harvesting was in progress and in every field could be seen the women hard at work reaping on their knees owing to the difficulty of supporting their body-weight for any length of time on their diminutive feet.

An International Medico-legal Case.

It is only a matter of a few years since the Chinese found out the powers of trade boycott, and it has in their hands become at times a weapon which has caused no little injury to the trade of the country against which it is enforced. Four years ago America was involved. During last year Japan suffered, and now England is in a fair way to become the chosen enemy—this time by the people of Kinkiang, who are banding themselves together to have nothing to do with British ships and commerce till they get "satisfaction," or, in other words, the heavy punishment of a consular constable and compensation for the so-called "murder" of a Chinese native. The circumstances were these. The constable was said to have administered a blow with his cane to a coolie who fell down and at once became very ill. No one actually saw the blow being given, but the man was close beside the constable (an Englishman) when he dropped on his knees with a groan. The constable went forward and on turning the man's face round found him ashy pale and had him at once removed to the British Consulate, where he was seen by Dr. Lambert, a Canadian, who pronounced his condition as very serious and gave him a stimulant and strychnine injection hypodermically. At the man's own request an attempt was made to remove him to his house but he died on the way. Dr. Lambert concluded that the man was suffering from internal hæmorrhage which might have resulted from other causes than a blow. He examined the body and found no signs of any blow. In his opinion death was due to internal hæmorrhage and to that only. Dr. Lambert said in his evidence that he had some conversation with the constable Mears which left a general impression that there had been a poke by Mears, but he could not make any positive assertion. As the judge in his summing up said: "It seems highly improbable that had Mears said he poked Yü (the dead man) Dr. Lambert would not have had much more than a general impression—such a statement could not but have made a definite and lasting impression on his mind. Dr. Lambert could not say that Mears had struck Yü and he could not say that death was due to a blow." The body was allowed to lie unburied on the road at the spot where death occurred for 11 days with only a slight covering of sand before a necropsy was undertaken by an American, Dr. E. H. Hart, a medical missionary from a neighbouring port, who was called in by the Taotai (prefect) of Kinkiang as a result of an agitation amongst the Chinese. This necropsy was performed at 4 A.M. in the dark on the road by lamplight. In a temperature averaging 70° F. and a humid atmosphere it may be judged that the body was then in a state of general putrefaction. Dr. Hart stated in his evidence that the liver, spleen, and kidneys were normal in shape and size, but that he was not allowed to remove them, nor did he make sections into them and was unable for want of microscopical examination to say there had been no previous disease. On opening the abdomen there was an escape of gas and blood, and, in addition to the blood he found lying free in the abdominal cavity, there was also blood inside the intestines. The peritoneal surface of the intestines was covered with numerous petechiæ of extravasated blood. He found a mark on the left flank of the abdomen which was of a "purplish-black" colour, and though he did not incise this "mark" he stated his conviction that it was a contusion caused by a blow, and he eventually pronounced death as being due to hæmorrhage in the abdominal cavity caused by a blow without in any way indicating the source of that internal hæmorrhage. When asked by the Consul what were the signs of decomposition he said that "the first signs are the body becoming black." It is not in accordance with medico-legal experience that a contusion should remain "purplish-black" or, seeing that no marks of violence could be detected during life, that the discolouration in the peeling skin of an 11 days old body could be so well differentiated, especially by lamplight, as to enable anyone to attribute hæmorrhage to a blow. Dr. Hart admitted that he could not swear to the discolouration being the result of a blow and not simply due to decomposition. For lack of any expert cross-examination his evidence was allowed to go forward without criticism, and, needless to say, it gave the Chinese a handle to their cause which they have not been slow to take advantage of, with the result that, although the defendant was discharged, the British authorities have been placed in a difficult position. Meanwhile, the wheels of the boycott machinery having been set in motion, and local ill-feeling against everything British having been aroused, it will require tact and work on the part of both British and Chinese authorities to show the people that it is absurd for them to describe such a case as one of murder. Foreign medical evidence, however loosely given, is taken as being absolutely in accordance with fact; it would therefore have been better to have avoided making the deduction that death was the result of a blow from such a superficial necropsy. When the doctor who made the necropsy pronounced all the organs as healthy it would have made his evidence of more import if he had given due weight to the presence of petechiæ on the bowel surface—a sign indicative of some morbid hæmorrhagic condition during life. It would also have spared him the animadversions of the judge, who referred to it as "a most extraordinary autopsy which was not only useless but improper. It was also illegal."

Peking, Sept. 29th.

UNIVERSITY OF LIVERPOOL.—At a meeting of the Faculty of Medicine held on Oct. 22nd the Dean announced the entries for the winter session as follows:—Medical School: New entries for degree courses, 23; new entries for diploma courses, 8; total number of undergraduates registered, 132; new entries for the Diploma of Tropical Medicine, 19; new entries for the Diploma of Public Health, 13. Dental School: New entries for degrees and diplomas, 14; total number of dental students registered, 42.

THE DEWSBURY INFIRMARY.—On Oct. 19th Sir T. Clifford Allbutt visited his birth-place, Dewsbury, to open a new nursing home and operating theatre for the Dewsbury Infirmary He delivered a retrospective address concerning his medical and hospital experiences in Leeds and the neighbourhood, and made an appreciative reference to the progress of modern nursing. He also described how the improvement of the sanitary conditions of the country by preventive medicine had decreased greatly the malignancy as well as the frequency of infective disease. Sir Clifford Allbutt was presented with an interesting souvenir of his visit, for which he was also warmly thanked by Dr. R. Beattie, seconded by Mr. W. W. Yates.

Obituary.

CESARE LOMBROSO.

ITALY, it has been said, is the only country in Europe besides Great Britain which offers a career to the Jewish race. Certainly she stands alone among her continental sisters in affording counterparts in politics to D'Israeli and Goschen; in law (international and civil) to Herschell and Jessel; in public health to John Simon. In this last-named field she is now mourning the loss of a conspicuous and, in many respects, most salutary worker, Cesare Lombroso, whose life, strenuous and public-spirited, was spent in applying nature study to the physical, mental, and social rehabilitation of Italians, and, indirectly, of the outlying Latin civilisation.

Born in Verona on Jan. 10th, 1836, he was the second son of Aronne Lombroso and Zefira Levi, from both of whom, particularly the mother, he inherited a bright intelligence and an instinctive devotion to the good of his fellow-man. As precocious as John Stuart Mill in linguistic aptitude, he had a working knowledge of Greek and Latin when most boys are learning the grammar of their native tongue, and when in his fifth year he would read aloud to his mother one of "Plutarch's Lives," and then at her bidding would give orally a detailed *résumé* of the "Life" just read. Sallust, Livy, and Tacitus were all, in his eleventh year, familiar to him in the original, and Dante, mainly through his father's encouragement and aid, he knew well-nigh by heart. In 1850 he was pursuing philological study under Paolo Marzolo, extending its application, thanks to that great scholar and teacher, to "comparative religion" and "comparative civilisation"; but, again at Marzolo's instance, he turned his attention to nature-study and found in it a yet more congenial outlet for his mental powers. He matriculated as a student of medicine in the University of Pavia in 1853 and continued at the classes till the outbreak of the War of Independence in 1859, by which time he had graduated with special qualifications in surgical pathology. On the army medical staff and in the field he acquitted himself with equal skill and courage, and shortly after the revindication of Lombardy to Italian unity he made accurate studies in mental disease, so utilising his opportunities in the lunatic asylums, urban and provincial, that his appointment to the chair of Psychiatry in the Scuola Pavese followed as a matter of course. In 1862, when Darwin's "Origin of Species," published three years before, had taken a hold on the Italian mind which it has never lost, there were few more convinced and enthusiastic students than young Lombroso. By this time he had applied experimental induction to the study and classification of insanity and its types, and from the observations then made and registered he proceeded to connect mental processes and developments with physical organisation, thus laying the first lines of what in later years became the science of which he was virtually the founder, that of "criminal anthropology." While still a teacher in the University of Pavia he became interested in that terrible scourge of rural Italy, "pellagra," and starting from the admirable work of Ballardini he traced it to a specific poison originating in the "corrupted maize" which enters so largely into the diet of the agricultural labourer. Following up his researches he noted the forms of mental disease supervening in the sufferers from pellagra and how these assume various characteristics in keeping with individual organisation. These findings were indeed side-lights on the theory he was gradually, and amid much opposition, both at Pavia and Milan, evolving as to the correlation and interdependence of somatic and mental pathology, afterwards to culminate in his "Uomo Delinquente" or "Criminal-Né." "Crime," according to him, "is the reflex, in the sociological field, of the organic anomalies of the delinquent—anomalies deep-seated, which, in their essential part, must be sought in the nerve centres, and in their accessory part in the other apparatus of the body, particularly in the osseous system. In as far as they are traceable to the nerve centres they produce psychical alterations quite characteristic and betray their degenerative nature in two ways: (1) in as far as they are the reproduction of an atavic character, corresponding to anterior stages of development of the human 'Psyche,' and reveal an 'arrest of development' which places the individual on a lower plane than his fellows; (2) in as far as they are the reproduction of an epileptic character and assimilate the 'delinquente' to a 'neuropathic'—epilepsy being one of the graver, more pronounced degeneracies known as 'neuropathiae.'" Such is the theory, the practical result of which is to recognise in the individual the "accessory anomalies" (of the osseous system, *inter alia*) as the organic cause of his "delinquency," and, further, to combat the tendency in the individual by such preventive measures as improve the organic substratum of the race. Criminology, so conceived and applied, transfers crime from the sphere of traditional jurisprudence to that of anthropological and psychiatric research.

This is not the place to examine what elements—more or less—of truth the theory possesses, suffice it to say that the book in which it was set forth appeared in 1876 and at once commanded attention and provoked controversy often keen, sometimes embittered. That it was not without a considerable measure of acceptance may be inferred from the fact that "Criminal Anthropology" is so far recognised as a science as to number many votaries whose periodical congresses on an international scale, and held in the chief capitals of Europe, are now a standing feature in contemporary life, medical, forensic, and sociological. On the same lines as the "Uomo Delinquente" followed his treatises on the "Uomo di Genio" (written in conjunction with his son-in-law, the brilliant historian of ancient Rome, Guglielmo Ferrero), and his studies on "Delitto Politico," on the "Donna Delinquente," and, more especially in the psychological field, on "Mediumismo." Of these it is unnecessary to give an appreciation, standing or falling, as they do, with the initial work, "L'Uomo Delinquente." Called to the chair of Criminal Anthropology in Turin—a chair he may be said to have founded—he sent forth year by year relays of enthusiastic votaries of the science whose intervention at the International Congresses kept his theory in evidence, if not always in acceptance, before the delegates of all the other European schools. Among these Congresses the most animated and memorable was that held at Geneva in the August of 1894, in which Lombroso himself and his intrepid young henchman Enrico Ferri were the protagonists. He was, indeed, more effective in debate than in academic exposition in the professorial chair, when his digressions and parenthetical "vindications" obscured the theme in hand to all but the initiated few.

Apart from his official duties and his provocative theories, no man was more beloved as a citizen or more respected as a publicist—his transparent honesty in address as in motive winning the sympathies of all who came in contact with him, inspired as he was with the purest philanthropy and belief in the progress of man. For years past his physique had begun to show signs of senile degeneration; cardiac trouble supervened, and though the end came suddenly at 5 A.M. on Oct. 19th, those near and dear to him were not unprepared for it. On the night before he had been particularly vivacious at dinner, discussing with his family and guests the "tragedy of Montjuich," the crisis in Spain, the Tsar's coming to Italy, and all the exciting topics of the hour. At 11 P.M. the party broke up and he retired to rest; but at 2 A.M. his wife became aware that he was suffering from severe cardiac spasm. Soon all the inmates of the house were at his bedside—his gifted daughters Gina and Paola, his son Ugo (assistant to Dr. Luciani, professor of physiology in the Roman School), and later, his two sons-in-law, Guglielmo Ferrero and Mario Carrara (professor of legal medicine in Turin). But he never regained consciousness and "entered into rest" three hours after the seizure. All Italy has joined in lamenting his loss—the leading journals appearing in black borders and commenting on his life and work, with singular unanimity extolling the tenor of the one and the value, theoretical and even practical, of the other. A public funeral, the largest and most conspicuously representative witnessed of late years in Turin, attested on Oct. 20th the esteem and affection in which he was held in the city and province, and among the *oraisons funèbres* customary on such occasions in Latin countries, those of Luigi Pagliani, Professor of Hygiene; of Teofilo Rossi, the Syndic; of Enrico Ferri, Professor of Criminology in the Roman School; and of his son-in-law, Guglielmo Ferrero,

man of letters and historian, went home to the hearts of the audience for their pathos and power.

As we write we are informed that a book on which the last years of his life were employed will soon be published at Turin, entitled "Ricerche sui Fenomeni Ipnotici e Spiritici" (Researches on the Phenomena of Hypnotism and Spiritism). A handsome octavo of over 300 pages and with 57 plates illustrative of the text, it forms the latest enrichment of a literature to which nearly every civilised country has contributed, the English-speaking world being represented by Crookes, James, Hislop, Lodge, and Wallace, whose work is criticised or supplemented in its pages.

WILLIAM CLIBBORN, B.A., M.D. DUB., L.R.C.S. IREL.

Dr. William Clibborn, who died suddenly from cardiac syncope on Oct. 13th at Earl's Court, was the son of John Clibborn of Dublin. He was educated at Stackpoole's College, Kingstown, and graduated M.D. of Trinity College, Dublin, in 1878, and also took the Diploma of the Royal College of Surgeons in Ireland in 1875. He held many public medical and hospital appointments in Dublin and Birmingham, and finally settled in Bridport, where he practised for 20 years and gained many friends and took a prominent part in local affairs. He held the posts of medical officer of health, Admiralty surgeon, and other appointments. He was one of the pioneers in the foundation of the Medical Sickness and Assurance Society, which has enjoyed such a great success. Five years ago Dr. Clibborn retired from active practice, finding the fatigue and exertion inseparable from a large and widely scattered country practice too great a strain, and since then he has been travelling abroad for the benefit of his health. His genial manner, good nature, and thoughtfulness for others endeared him to all who knew him. He leaves a widow and many friends by whom he will long be remembered.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The death of the following eminent foreign medical man is announced: Dr. Xenophon Ch. Scott, Professor of Ophthalmology in the Western Reserve University, Cleveland.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—N. B. Benjafield (Sections I. and II.), University College Hospital; H. S. Brown (Section II.), Birmingham; M. Graves (Section I.), London Hospital; A. W. Hansell (Sections I. and II.), Leeds; J. A. Jones (Section I.), Manchester; E. Newhouse (Sections I. and II.), Leeds; S. K. Poole (Section II.), Guy's Hospital; S. H. Scott (Section II.), London Hospital; and G. Tate (Sections I. and II.), King's College Hospital.

Medicine.—H. E. Battle (Sections I. and II.), Leeds and University College Hospital; H. S. Brown (Section II.), Birmingham; B. Robertshaw (Section II.), Manchester; S. H. Scott (Section II.), London Hospital; H. Stanger (Section I.), Leeds; and J. W. Williams (Section II.), Guy's Hospital.

Forensic Medicine.—H. E. Battle, Leeds and University College Hospital; E. G. Brisco-Owen, Cardiff and Royal Free Hospital; H. S. Brown, Birmingham; F. F. L. How, Middlesex Hospital; B. Robertshaw, Manchester; and H. Stanger, Leeds.

Midwifery.—C. S. Foster, Middlesex Hospital; A. W. Hansell, Leeds; D. M. Hunt, London Hospital; and A. H. Rich, University College Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—N. B. Benjafield, H. S. Brown, B. Robertshaw, S. H. Scott, and G. Tate.

TRINITY COLLEGE, DUBLIN.—At examinations held recently the following candidates were successful:—

INTERMEDIATE MEDICAL EXAMINATION.

Part I.—William O. W. Ball, William P. Croker, Walter Crane, Jane F. Colquhoun, Maurice Horan, Marjory Chapman, Charles F. Judd, James N. G. Nolan, and Francis V. Agnew.

PRELIMINARY SCIENTIFIC EXAMINATION.

Physics and Chemistry.—Theodore Allen, Robert A. Flood, Reginald H. Jones, William Foot, Joseph Harvey, John W. C. Stubbs, John A. Mac Mahon, Rupert C. Lowe, Henry C. D. Miller, Hawtrey W. Browne, Kathleen D. Wallace, and Eleanor Taylor.

Botany and Zoology.—Amos G. Varian, John T. M'Cullagh, George S. M'Conkey, Joseph Harvey, Ernest Bantry White, Hilda M. B. Marsh, Frederick R. Sayers, Michael J. Ryan, Bertram Sheridan, and Frederick A. Sparling.

PREVIOUS DENTAL EXAMINATION.

Anatomy and Institutes of Medicine—Henry Kirk.

FOREIGN UNIVERSITY INTELLIGENCE.—*Buenos Ayres:* Dr. Faustino J. Trongé has been appointed Assistant Professor of Clinical Midwifery and Dr. Rudolfo Erauzquin Assistant Professor of Odontology.—*Cologne (Academy of Practical Medicine):* Dr. Kayser, *docent* of Surgery, has been granted the title of Professor.—*Padua:* Dr. Luigi Messedagalia has been recognised as *privat-docent* of Medicine.—*Palermo:* Dr. Giovanni de Gaetani has been recognised as *privat-docent* of Internal Pathology, and Dr. Antonio Coletti as *privat-docent* of External Pathology.—*Prague (German University):* Dr. Alexander Margulies, *privat-docent* of Psychiatry, has been granted the title of Extraordinary Professor.

CENTRAL LONDON THROAT AND EAR HOSPITAL.—Mr. Charles A. Ballance, M.V.O., will deliver an address on "The Lesson to be Learnt in London from the History of the Mastoid Operation" at the Central London Throat and Ear Hospital, Gray's Inn-road, on Monday, Nov. 8th, at 4.30 P.M.

LITERARY INTELLIGENCE.—"A Bibliography of Trypanosomiasis," embracing original papers published prior to April, 1909, and references to works and papers on Tsetse-flies, especially Glossina Palpalis (Rob.-Desv.) and on Sleeping Sickness, has been compiled by C. A. Thimm, of the Sleeping Sickness Bureau, and is now in the press. The work will be issued under the direction of the honorary managing committee in a few weeks.

ORAL SEPSIS AND TETANUS.—At an inquest on the body of a woman, who died from tetanus last week at Southwark, it was given in medical evidence that the teeth were in a very bad state and the septic condition of the mouth might have been responsible for the entrance of the infection. There was a slight wound on the toe, but this had occurred within three days of the onset of symptoms and was therefore probably not responsible for the disease. Dr. F. J. Waldo, the coroner, took the occasion to warn the public on the dangers of neglecting the proper care of the teeth.

HEALTH OF CYPRUS.—Sir Charles King-Harman, K.C.M.G., High Commissioner of Cyprus, in his report to the Secretary of State for the Colonies for 1908-09, remarks that the public health of the island was not so good as in previous years owing to an outbreak of epidemic cerebro-spinal meningitis of an extensive and violent character, which occurred, almost simultaneously, in nearly every district. The number of cases reported was 558, and of these 280, or a little over 50 per cent., terminated fatally. The disease as a rule attacked the poorest class of persons living in damp insanitary dwellings, while those living in more comfortable and cleanly circumstances were, generally, immune. Malarial fevers also were more prevalent than in ordinary years, and large quantities of quinine were imported and distributed for their treatment. The death-rate from this cause was not heavy. Sporadic cases of typhoid fever and a considerable number of cases of influenza detracted also from the general good health of the island. The rural medical service was further extended during the year by the appointment of two additional medical officers. This branch of the service does good work among the villages and is greatly appreciated by the people. The number of inmates of the leper farm at the close of the year was 98, one more than at the end of the preceding year. The general health of the inmates was good; the number of deaths was four. The children of these unfortunate people are cared for and brought up in a separate institution. They number 11, of ages from 2 to 13 years, and up to the present time no sign of leprosy has developed among them. With the exception of a grave crisis in the wine industry, the reports from the several districts of the island indicate a continuance of the prosperity of the people. The standard of living continues to improve and the requirements of the villagers become less simple and more expensive to satisfy. This is abundantly manifested in the improved style and furnishing of their dwellings; in the increasing demand for, and readiness to purchase, land for cultivation; in the higher prices demanded for their produce; in the restoring and rebuilding of their churches and schools. The Commissioner adds: "There are those who maintain that the British occupation has done nothing for their country and who

remain wilfully blind to the progress which the island is making, but to any impartial observer, to anyone who was acquainted with the state of affairs which existed 30 years ago, that progress is as clear as the sun in the firmament."

THE Edinburgh University Club in London will hold its next dinner on Friday, Nov. 12th, when the chair will be taken by Mr. J. D. Malcolm.

A CONSIDERABLE extension of the accommodation of the Royal Eye and Ear Hospital at Bradford is contemplated, for which some £10,000 are required.

A COOKERY EXHIBITION. — The Twentieth Universal Cookery and Food Exhibition will be held at the Royal Horticultural Hall, Vincent-square, Westminster, from Nov. 2nd to 6th inclusive.

DONATIONS AND BEQUESTS.—A sum of £1000 has been voted by the Governor and Court of the Bank of England to the special fund in aid of St. Bartholomew's Hospital. An anonymous donor has also contributed £250.

THE EVELINA HOSPITAL.—The committee of the Evelina Hospital for Children regrets to announce that, owing to ill-health, Mr. Charles Wightman has resigned the chairmanship, a position which he has held for some years with considerable advantage to the institution. Mr. Donald Malcolm Scott has been chosen as his successor in the chair.

PRESENTATION TO A MEDICAL PRACTITIONER.—On Oct. 19th at Rugby Mr. T. Johnston, M.R.C.S. Eng., was presented with a marble clock as a mark of respect and esteem by the members of the Ancient Order of Druids, of which he is a Past Arch, on the occasion of his leaving Rugby to take up a practice in Hove.

THE WEST RIDING MEDICAL CHARITABLE SOCIETY.—Comment has been made in these columns on more than one occasion on the excellent work done by this association. The annual meeting, which is held in different centres in the West Riding, took place at Harrogate during the month of September and was well attended. The thought that was uppermost in the minds of all who were present was the sad one that by the hand of death the society had been deprived of its most distinguished, its most enthusiastic, and its most judicious head in the person of Mr. C. G. Wheelhouse. His connexion with the society is briefly summarised in the opening paragraphs of the annual report, which was read at the meeting, and which runs as follows:—

"We meet to-day under the shadow of a great bereavement. For the second time in its history our society has to mourn the loss of a presiding spirit." Such were the words used by Mr. Wheelhouse in reference to the death of the late Dr. Chadwick when writing the annual report in 1887. Now, 22 years later, a third epoch is brought to a close by the death of him whose words have been quoted.

Mr. Wheelhouse's father was one of the stewards appointed at the first annual meeting of the society and his partner, Mr. Garlick, was its first secretary. It was not unnatural, therefore, that Mr. Wheelhouse himself should take a deep interest in the charity, an interest which was ripened by the warmth of his kindly nature into an affection and love which remained unaltered and undiminished until the day of his death.

Mr. Wheelhouse joined the society in 1853, in which year 15 grants, amounting to £291, were voted. In 1874 he was appointed joint secretary with Dr. Chadwick, and in the following year was asked to undertake the duties of treasurer in addition; his first duty in the latter office was to hand to stewards the sum of £815 for the payment of 19 grants. Last year, after the annual meeting, from which, to his great grief, failing health kept him away, he issued cheques for £1680—the amount of your grants to 49 applicants. It was always a joy to him to contemplate the increasing benefits the charity was able to bestow and to feel it was in some measure due to his careful administration that the means were forthcoming wherewith it was possible to meet these growing demands. The society is also indebted to its late treasurer for his labour in compiling "The story of its origin and early years," which was published in 1901.

His cheery presence, his power of speech, and his whole-hearted devotion to the interests of the society will always be a pleasant memory and a bright example to those who were associated with him.

For many years Mr. Wheelhouse had the valuable assistance of Mr. Herbert Rowe, who under his guidance has mastered all the details of the management of the association and who is manifestly imbued with the same spirit of whole-hearted enthusiasm for its welfare. It was natural therefore that he should have been appointed Mr. Wheelhouse's successor and the unanimity and cordiality with which this was done were a tribute to the excellence of his long services. Grants were made at the annual meeting to 47 applicants amounting to £1625, and the total amount made in grants since the commencement of the association is thus brought up to the large sum of £47,920 10*s*.

MEMORIAL TO PROFESSOR LIONEL S. BEALE.—On Oct. 20th a bronze memorial tablet was unveiled in the chapel of King's College Hospital to the late Professor Lionel S. Beale. The tablet was designed, worked, and erected by his son, Mr. Peyton T. B. Beale, F.R.C.S., surgeon to the hospital and the present Dean of the Medical School. The inscription sets out very simply Dr. Beale's long connexion with the hospital, exactly 50 years, as physician and consulting physician. Among those who were present at the ceremony, which was a private one, were, in addition to the members of Mr. Beale's family, the Hon. W. F. D. Smith, M.P. (chairman of the hospital), Colonel C. F. Fellows, Mr. L. W. Byrne, Dr. Nestor Tirard (senior physician of the hospital), Dr. Urban Pritchard, Dr. N. Dalton, Dr. G. B. Flux, and members of the nursing staff, past and present. After a very short service by the chaplain, the Rev. T. B. J. Parker, the unveiling ceremony was performed by Dr. Tirard, who delivered the following address:—

In unveiling this memorial tablet I have asked permission to say some few words—and they are few, not because there is not much that might be said, but because it is felt that it would have been his desire. The tablet is a simple record of his name and the dates during which he worked within these walls. That his work was esteemed is shown from these dates, since they indicate service, continued by request, beyond the normal span. Of the nature of his work, of his cheery service in the wards, of the practical nature of his teaching, of his care for the interests of the school and for the nursing staff, it is not the time for me to speak. I like to cherish three bright memories: in 1872-73 his eagerness in welcoming junior students and others and showing them his microscopic treasures; in 1883 his ready help, when he gave me the results of his experience when I was undertaking new and difficult work; and then, the brightest of all, when at Weybridge amongst his flowers he showed what marvels could be effected by patient skill, not forcing, but encouraging. Patient and cheerful, fearless when defending his firm beliefs, he was, to those who had the privilege of working with him, a perpetual example. The tablet does no more than to say that he worked here for many years. Though it will serve to keep this fact before those who come after us, we who knew him well still feel the influence of his life, still benefit by his experience, and to us he still lives.

In these days, when the subject of pathology is of such moment, it is fitting that a memorial should be erected at the hospital where he worked so long to this pioneer among pathologists, whose work, especially in the application of microscopic methods to the diagnosis of diseases, was and is of the first importance.

STANDARDISATION OF BREAD.—The Bread and Food Reform League has issued a document concerning the standardisation of bread, stating that whole meal, which should be ground to a uniform fineness, contains about two and a half times more of the mineral substances which form bones and teeth, and nourish the brain, nerves, and tissues, than white flour, and that it also contains four times more iron, a considerable portion being found in the germ in a readily digestible condition. The League urges that household bread should retain the germ, which has singular richness in oil, in nitrogenous matter, and in phosphoric acid, and also the semolina, a portion of the wheat, very rich in flesh- and bone-forming materials and in fat, but with little fibre. The semolina was formerly retained in household flour, but millers now separate a large percentage of it, and use a considerable proportion for their expensive patent flours, to the detriment of ordinary household flour. The Bread and Food Reform League advocates that the bread of the people should contain this semolina and has obtained guarantees that it is retained in the old-fashioned household bread now used, on the league's recommendation, at Christ's Hospital (Blue Coat School) and at dinners provided for children at London County Council schools by the Alexandra Trust. The league further states that "it is very desirable that a standard should be fixed for what is sold as bread. This has been established for milk, and the standardisation of bread is even more important, as bread and flour form about two-fifths of the weight of food consumed by the working classes, and constitute almost the sole diet of many poor children. A supply of nourishing bread is therefore of vital national importance." Amongst the signatories to this statement are Sir J. Crichton-Browne, Sir John Byers, Sir J. Halliday Croom, Sir T. R. Fraser, Sir Alfred Fripp, Sir William Ramsay, Mr. Andrew Fullerton, Mr. A. Pearce Gould, Dr. Hector Mackenzie, Mr. A. W. Mayo Robson, Dr. J. J. Perkins,

Professor Smith, Dr. H. Hammond Smith, Dr. David Walsh, Dr. C. Theodore Williams, Dr. B. C. A. Windle, Professor G. Sims Woodhead, and other medical men. Further information can be obtained from the honorary secretary, Bread and Food Reform League, Miss May Yates, 5, Clement's-inn, Strand, London, W.C.

THE WINDSOR AND DISTRICT MEDICAL SOCIETY.—The annual general meeting of this society, which was held in the board-room of King Edward VII. Hospital, Windsor, on Oct. 14th, under the chairmanship of the President, Dr. Francis H. Hawkins of Reading, was a particularly interesting function. After the adoption of the honorary treasurer's report the President delivered his address, which, in addition to other topics, recounted various matters of interest in the history of the society from its foundation to the culminating point in its career—namely, the inauguration of the handsome library within the walls of the hospital. At the close of the meeting an adjournment took place to this new library, which was formally declared open by Sir Richard Douglas Powell, President of the Royal College of Physicians of London, who at the same time unveiled a portrait of Mr. W. B. Holderness, J.P., who had presided over the society for the first seven years of its existence. Sir Richard Douglas Powell presented the library with a copy of the handsomely bound facsimile reproduction of the diploma granted to William Harvey by the University of Padua in the year 1606, which was published last year by his College. He also spoke at some length on the value of libraries to societies of medical men and their value in forming a bond of union between provincial hospitals and the neighbouring practitioners. Mr. W. J. Handfield Haslett (Sunbury) in an eloquent speech moved a formal vote of thanks to Sir R. Douglas Powell for his kind attendance—a resolution which was seconded by Mr Holderness in a speech in which he also thanked the society for the honour which it had conferred upon him in placing his portrait in the library. Mr. P. J. de Paravicini chairman of the hospital committee, also spoke on behalf of the hospital, and the distinguished visitor having replied the proceedings terminated. The annual dinner of the society took place after the meeting, at which Sir R. Douglas Powell, Lord George Pratt, Mr. de Paravicini, the Mayor of Windsor (Mr. W. Carter, J.P.), Dr. S. West, Dr. W. Hale White, Dr. Jamieson B. Hurry, and others were present.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The International Conference on Leprosy.

THE report of Dr. ARTHUR NEWSHOLME, medical officer of the Local Government Board, and Sir MALCOLM MORRIS, K.C.V.O., the delegates of His Majesty's Government to the International Scientific Conference on Leprosy held at Bergen from August 15th to 19th, 1909, has been presented to Parliament.

Bills Passed.

Amongst the measures which have passed during the present session, and have now received the Royal Assent, are the Local Education Authorities (Medical Treatment) Act and the Metropolitan Ambulances Act.

Asylums Officers' Superannuation.

Several changes have been introduced into the Asylums Officers' Superannuation Bill in committee of the House of Lords. At the instance of Lord BELPER an amendment was accepted substituting 20 for 15 years as the qualifying period of service, and 55 instead of 50 years as the age when an officer would be entitled to claim superannuation. A subsection was introduced to allow the visiting committees to grant to an officer permanently incapacitated by some injury specifically attributable to the nature of his duty a reasonable gratuity or special superannuation allowance.

The Housing and Town Planning Bill.

When the Lords' amendments to the Housing and Town Planning Bill come before the House of Commons for consideration it is very likely that one or two of the provisions with regard to the medical officers of health of counties which have been struck out will be reinserted. Several medical Members of the House of Commons have, it is understood, pressed vigorously on the President of the Local Government Board the desirability of making these medical officers irremoveable without the consent of the Local Government Board. Mr. BURNS, it is stated, is prepared to fall in with their views and to advise the House of Commons to reinsert the excised provision. On another point it is not unlikely that something may be done in the hope of restoring still further the original terms of the clause dealing with county medical officers of health. The Lords struck out the powers given to the Local Government Board to prescribe the duties of these officers. In all probability, a compromise on this provision will be suggested which will make the county councils, and not their medical officers, the recipients of the communications of the Board in this regard.

Beri-beri on Merchant Vessels.

Several questions have recently been addressed by members of the Labour party to the representatives of the Board of Trade in the House of Commons on the occurrence of specific cases of beri-beri on British merchant vessels. For the most part the persons attacked by the disease have been Lascars. In answering one question on the subject Mr. TENNANT informed an honourable Member that the cause of beri-beri had not yet been definitely ascertained, but there seemed to be no doubt that bad and insufficient food predisposed to the disease. A full report of the inquiry in the specific case on which the question was based was communicated to the Royal College of Physicians of London, which body had the subject of beri-beri under investigation.

Tuberculosis Prevention in Ireland.

A petition from the Royal Sanitary Institute praying for further legislation with regard to the prevention of tuberculosis in Ireland has been presented to the House of Commons.

HOUSE OF COMMONS.

WEDNESDAY, OCT. 20TH.

The Naval Medical Service.

Dr. V. H. RUTHERFORD asked the First Lord of the Admiralty whether his attention had been called to the acquittal of Fleet-Surgeon Charles Matthew by court-martial on a charge of behaving with contempt towards Commander Richard Walters, and also to the fact that Fleet-Surgeon Matthew was placed on the retired list at his own request on account of the charge; whether Commander Walters had retired; and what steps he was taking, in the interests of efficiency in the navy, to remove the alleged grievances of the Naval Medical Service.—Mr. MCKENNA replied: Yes, sir, Fleet-Surgeon Matthew has been placed on the retired list at his own request. Commander Walters has not retired. I should be glad if my honourable friend will direct my attention to the alleged grievances referred to in the last part of his question.

Dr. RUTHERFORD: Was a commission appointed to inquire into these alleged grievances?

Mr. MCKENNA: A committee was appointed to inquire into certain circumstances affecting the medical service in the navy, but I would not describe them as grievances.

Dangerous Hair-washes.

Sir WILLIAM COLLINS asked the Secretary of State for the Home Department whether he proposed to take any action with a view to restrict or prevent the use of substances for shampooing the hair which by reason of their poisonous or inflammable qualities were liable to cause serious injury or fatal results.

Dr. V. H. RUTHERFORD also asked the right honourable gentleman whether, in view of the recent further deaths which had taken place in the metropolis from the use of inflammable hair-washes, he could hold out any hope of the introduction of legislation next session for the purpose of prohibiting the use of such preparations.

Mr. GLADSTONE said, in reply to both questions: The matter is receiving my serious attention, and the question whether legislation ought to be undertaken will be fully considered. In the meantime, I may point out that, as intimated by counsel in the recent proceedings at Westminster police-court, the Director of Public Prosecutions would certainly prosecute for manslaughter if tetrachloride should again be used and a fatal result ensue. The inquest in the recent case of two deaths arising from the use of petrol is not yet concluded, but when the inquest is completed the question of prosecution will be considered by the Director of Public Prosecutions.

Guardians and Midwifery Orders.

Mr. HENRY WALKER asked the President of the Local Government Board whether he had sanctioned the rules of some boards of guardians restricting midwifery orders to mothers who had already not less than a specified number of children; and, if not, whether he would express his official disapproval to the boards which had embodied this restrictive provision in their rules.—Mr. BURNS answered: The reply to the first part of the question is in the negative. I am aware that in the Minority Report of the Royal Commission on the Poor-laws and Relief of Distress attention is drawn to the rules of certain boards of guardians restricting the grant of midwifery orders to mothers with a prescribed number of children. I have made inquiry on the subject, and I find that in some of the cases cited the rule is seldom or never acted upon, whilst in others it does not apply if the relief is given by way of loan. I am still giving attention to the matter.

Mentally Defective Persons in Workhouses.

Mr. HENRY WALKER asked the President of the Local Government Board whether any legislation was being prepared in his department to give effect to the recommendations of the Royal Commission on the Care and Control of the Feeble-minded, with particular reference to the removal of mentally defective persons from the workhouses.—Mr. BURNS said in reply: The initiation of legislation affecting the methods of dealing with mentally defective persons in public institutions would not be a matter primarily for my department, but the recommendations of the Royal Commission on the particular matter referred to in the question will not be lost sight of by me when any such legislation is proposed.

Infantile Mortality in Poor-law Institutions.

Mr. HENRY WALKER asked the President of the Local Government Board, with reference to the statements in the Minority Report of the Poor-law Commission as to the absence of official statistics in regard to

the number of births in Poor-law institutions, the rate of mortality in Poor-law institutions of children between the ages of two and five years, and the rate of mortality under one year of age of infants being maintained on outdoor relief, whether he would request, by circular to boards of guardians or otherwise, that information on these several points should in future be collected and tabulated, with a view to its inclusion in one of the annual publications of his department.—Mr. BURNS replied: The recommendations made in the Majority Report and the Minority Report of the Royal Commission are receiving consideration. The recommendations in the former report as regards the development of official statistics cover a somewhat wider range than those in the Minority Report to which my honourable friend refers; and pending a decision on the whole matter I think it will be better to defer calling for any such special returns as are suggested in the question.

The Vaccination Order of 1907.

Sir MAURICE LEVY asked the President of the Local Government Board whether the Vaccination Order of 1907, which came into force in October, 1907, had had the effect of reducing the total cost of vaccination, comparing the cost per vaccination before and after the Order came into force; and, if so, what the reduction had been.—Mr. BURNS wrote in reply: There can be no doubt that the effect of the Order has been to reduce the cost of vaccination, but it would not be practicable to give the precise particulars desired by my honourable friend.

THURSDAY, OCT. 21ST.

Medical Appointments in India.

Mr. REES asked the Under Secretary of State for India whether Eurasian military assistant surgeons lent to civil and medical departments in India were not generally statutory natives of India, and in that case equally qualified with natives of India proper for all and sundry appointments reserved for natives of India; and whether natives of India, Europeans, and Eurasians were as such in any way disqualified from employment in the civil medical department.—The MASTER OF ELIBANK answered: The reply to the first question is in the affirmative. Indians are equally eligible with Europeans for admission to the Indian Medical Service, which service contains many Indian members. As to the civil medical department, I beg to refer my honourable friend to the papers recently presented to Parliament.

Mr. HAZLETON asked the honourable gentleman whether the India Office had received a resolution unanimously adopted at a meeting of the members of the medical profession, held under the auspices of the Bombay Medical Union, submitting that the present system of reserving all high and important posts in the medical service of India for military officers of the Indian Medical Service had led to the systematic exclusion of Indian medical men from them, no matter how highly qualified or deserving these Indian medical men might be; whether he was aware that the system in question had given rise to discontent and imposed unnecessary expense of over £100,000 on the Indian revenue; and what steps it was proposed to take in the matter.—The MASTER OF ELIBANK replied: The Secretary of State has not received the resolution referred to. On the general subject I would refer the honourable Member to the correspondence recently presented to Parliament as to the steps that are being taken to promote the growth of an independent medical profession in India by throwing open to the profession in general some of the various civil appointments now held by officers of the Indian Medical Service and other similar appointments which may be created in future.

Sir HENRY CRAIK: In making these changes has the Secretary of State had regard to the needs of the large number of English officials in India?

The MASTER OF ELIBANK: Both the Secretary of State and the Viceroy are making inquiries.

Mr. REES: Would not the expense of Indian administration be greatly increased if military medical officers were not engaged in civil employment in time of peace, inasmuch as a double set of officers would have to be retained?

No reply was given.

Carbon-Monoxide Poisoning.

Mr. G. ROBERTS asked the Secretary of State for the Home Department whether his attention had been directed to a disease affecting certain workers in the printing trade, known as carbon-monoxide poisoning, arising from the fumes of a gas now being largely used in heating the metal pots attached to linotype composing machines; and whether he would cause an inquiry to be made with a view to the disease being scheduled as an industrial disease under the Workmen's Compensation Act.—Mr. GLADSTONE replied: I have made inquiry into the case of which the honourable Member has been good enough to send me particulars, and the reports would appear to show that it was a case of gradual poisoning by carbon monoxide. Such cases are extremely rare, and no other case of the kind in connexion with linotype work is known to the department. Poisoning by carbon monoxide is, of course, not uncommon, but it is almost invariably more or less sudden and of the nature of an accident, so as to come clearly under the main provisions of the Workmen's Compensation Act. The question of scheduling carbon-moxide poisoning as a disease was considered by the Industrial Diseases Committee, but they were unable to regard the evidence as sufficient to justify their recommending its inclusion. In view, however, of the present case, I will give instructions for the matter to be carefully watched by the officers of the department.

Declarations under the Vaccination Act, 1907.

Mr. LUPTON asked the President of the Local Government Board whether he would state for what proportion of the births occurring from Jan. 1st to June 30th, 1909, were declarations made under the Vaccination Act, 1907, and how many declarations were actually made during that period.—Mr. BURNS answered: The number of births in England and Wales registered in the first two quarters of 1909 was 466,216. It cannot at present be stated in respect of how many of these children statutory declarations of conscientious objection to vaccination have been made. The number of declarations received by the vaccination officers during the first six months of the present year may be stated approximately as 88,500.

MONDAY, OCT. 25TH.

The Sewerage System of Kilkee.

Mr. A. LYNCH asked the Chief Secretary to the Lord Lieutenant of Ireland, whether his attention had been called to the fact that the defective character of the present sewerage system in Kilkee had been the cause of considerable detriment to that town; and whether he could state what steps he was prepared to take with the object of providing a scheme for the establishment of a satisfactory sewerage system in Kilkee.—Mr. BIRRELL replied: The question of the unsatisfactory sewerage arrangements at Kilkee has occupied the attention of the Local Government Board for a long time, and in 1904 it issued an order dealing with this subject and with the water-supply. Legal difficulties have, however, considerably delayed the Kilrush rural district council in procuring an improved water-supply without which new sewers could not be advantageously laid down. As the Board now understands that the new water-supply will shortly be in working order it has urged the district council to appoint an engineer and obtain plans for a sewerage system. In the event of unnecessary delay in proceeding with the works the Board will take steps to enforce its order.

WEDNESDAY, OCT. 27TH.

The Poisons and Pharmacy Act, 1908.

Mr. SNOWDEN asked the Secretary of State for the Home Department, whether he was aware that town councils were issuing, in large numbers, licences to sell poisons under Section 2 of the Poisons and Pharmacy Act, 1908, in places where abundant facilities were provided by the shops of qualified chemists; and, in view of the statement made in that House by the Under Secretary when the Poisons and Pharmacy Bill was under discussion, that licences would only be granted under Section 2 where reasonable facilities did not exist, would he take steps to stop the granting of such licences in violation of that understanding and to cancel such licences as had been issued in contravention of it.—Mr. GLADSTONE replied: I am afraid that I cannot add anything to the answers which I gave to questions by the honourable Member on this subject in June last. I have no power to control the action of the town councils, and I have already called the attention of the Privy Council Office to the allegations made.

BOOKS, ETC., RECEIVED.

KARGER, S., Berlin.

Ueber die medizinischen Folgezustände der Katastrophe von Courrières (10. März, 06). Von Dr. Eduard Stierlin. Price M. 6.

Abhandlungen aus dem Gebiete der Geburtshilfe und Gynaekologie. Mitteilungen aus der Zweiten Frauenklinik der Königl. Ung. Universität zu Budapest. Herausgegeben von Prof. Dr. W. Tauffer. Band I. Heft 2. Price M. 3.

Uber Asthma und seine Behandlung. Von Dr. M. Saenger. Price M. 1.50.

Klinische Mitteilungen aus dem Gebiete der Ohren- und Nasen-Krankheiten. Von Dr. Victor Lange. Price M. 3.60.

KIMPTON, HENRY, London. (STENHOUSE, ALEXANDER, Glasgow.)

The Physiological Feeding of Infants. By Eric Pritchard, M.A., M.D. Oxon., M.R.C.P. Lond. Third edition, greatly enlarged and entirely rewritten. Price 7*s.* 6*d.* net.

LEWIS, H. K., London.

Medical Morbid Anatomy and Pathology. By Hugh Thursfield, M.D., F.R.C.P., and William P. S. Branson, M.D., M.R.C.P. Price 6*s.* net.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

International Clinics. Edited by W. T. Longcope, M.D., with Collaboration. Volume III. Nineteenth Series, 1909. Price not stated.

LIVINGSTONE, E. AND S., Edinburgh.

Catechism Series. Chemistry. Part II. Inorganic and Organic. New edition, revised and enlarged. Price 1*s.* net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

Outlines of Bacteriology (Technical and Agricultural). By David Ellis, Ph.D. Marburg, D.Sc. Lond., F.R.S.E. Price 7*s.* 6*d.* net.

Proceedings of the Royal Society of Medicine. Vol. II., No. 9. July, 1909. Price 7*s.* 6*d.* net.

Quain's Elements of Anatomy. Editors, E. A. Schäfer, LL.D., Sc.D., F.R.S., J. Symington, M.D., F.R.S., and T. H. Bryce, M.A., M.D. In Four Volumes. Vol. III. Neurology. By E. A. Schäfer and J. Symington. Part II. Eleventh edition. Price 15*s.* net.

Recent Advances in Physical and Inorganic Chemistry. By A. W. Stewart, D.Sc. With an Introduction by Sir William Ramsay, K.C.B., F.R.S. Price 7*s.* 6*d.* net.

The Family and the Nation. A Study in Natural Inheritance and Social Responsibility. By William Cecil Dampier Whetham, M.A., F.R.S., and Catherine Durning Whetham, his wife. Price 7*s.* 6*d.* net.

The Relation of Medicine to Philosophy. By R. O. Moon, M.A., M.D. Oxon., F.R.C.P. Price 7*s.* 6*d.* net.

LOTHIAN, THOMAS C., Melbourne.

The Elements of Animal Physiology. By W. A. Osborne, M.B., D.Sc. Price not stated.

MILLS AND BOON, LIMITED, London.

Home Life in Ireland. By Robert Lynd. Price 8*s.* net.

PULMAN, GEORGE, AND SONS, LIMITED, London.

The Westminster Hospital Reports. Edited by E. D. Macnamara and E. Rock Carling. Volume XVI. 1909. Published at 6*s.* net. Price to Subscribers, 5*s.*

REBMAN, LIMITED, London.

Naval Hygiene. By James Duncan Gatewood, M.D. Price 25*s.* net.

REID, ANDREW, AND CO., LIMITED, Newcastle-upon-Tyne.

University of Durham College of Medicine, Newcastle-upon-Tyne. Calendar for the Year 1909–1910. Price not stated.

SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

Pharmacopedia. A Commentary on the British Pharmacopœia, 1898. By Edmund White, B.Sc. Lond., F.I.C., and John Humphrey. Second Edition. Price not stated.

SMITH, ELDER, AND CO., London.

Great and Greater Britain. By J. Ellis Barker. Price 10s. 6d. net.

STEVENS AND HAYNES, London.

A Manual of Forensic Chemistry, dealing Especially with Chemical Evidence, its Preparation and Adduction. Based upon a Course of Lectures delivered at University College, University of London. By William Jago, F.I.C., F.C.S., of Lincoln's Inn, Barrister-at-Law. Price 5s. net.

THEOSOPHICAL PUBLISHING SOCIETY, London.

Health, Physical and Mental, or Hygiene of Body and Mind. With Hints on Prevention and Cure of Disease through Cultivation of Natural Immunity. By C. W. Johnson. Price 2s. net.

TOWNSHEND, TAYLOR, AND SNASHALL, Cape Town.

Cape Colony To-day. Second Edition. Issued by the Cape Government Railway Department. Price not stated.

UNWIN, T. FISHER, London and Leipsic.

Ann Veronica. A Modern Love Story. By H. G. Wells. Price 6s.

Psychotherapy. By Hugo Münsterberg, M.D., Ph.D., Litt.D., LL.D. Price 8s. 6d. net

URBAN UND SCHWARZENBERG, Berlin und Wien.

Lehrbuch der Ernährung und der Stoffwechselkrankheiten. Von Professor Dr. F. Umber. Price M. 12·50.

Die Cystoskopie im Dienste der Chirurgie. Ein Atlas cystoskopischer Bilder mit begleitendem Text für Aerzte und Studierende. Von Stabsarzt Dr. O. Rumpel. Price M. 30.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ALDERSON, G. G., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to University College Hospital.

BENNEE, ALBERT E., M.B., Ch.B. Edin., has been appointed Senior House Surgeon to the Blackburn and East Lancashire Infirmary.

BUCHAN, THOMAS, M.B., Ch.B. Edin., has been appointed Junior House Surgeon to the Blackburn and East Lancashire Infirmary.

BURNETT, W. E. S., L.R.C.P. & S. Edin., has been appointed Medical Officer of Health to the Mottram Urban District Council.

CLAYTON, F., M.D., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to University College Hospital.

COLLINGWOOD, B. J., M.B., B.S. Cantab., has been appointed Professor of Physiology and Histology in the University College, Dublin.

DAVIES, T. B., M.B., B.S., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to University College Hospital.

DEMPSEY, MARTIN, M.D., B.Ch. Dub., F.R.C.P. Irel., has been appointed Professor of Materia Medica and Therapeutics in the University College, Dublin.

EMANUEL, J. G., M.D., B.S., B.Sc. Lond., M.R.C.P. Lond., has been appointed Honorary Physician to Queen's Hospital, Birmingham.

FERGUSON, J. H., M.B., B.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Keighley District of the county of York.

FRASER, FORBES, F.R.C.S. Eng., has been appointed an Honorary Surgeon to the Royal United Hospital, Bath.

HOLROYDE, G., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Windermere District of the county of Westmoreland.

MACKENZIE, JAMES, M.D., M.S. Edin., has been appointed an Assistant Physician to the Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead and Northwood, Middlesex.

MCWEENEY, E. J., M.D., M.Ch. R.U.I., F.R.C.P. Irel., has been appointed Professor of Pathology and Bacteriology in the University College, Dublin.

MAURICE, W. B., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Marlborough District of the county of Wilts.

MEENAN, J. N., M.B., B.Ch. R.U.I., has been appointed Professor of Hygiene and Medical Jurisprudence in the University College, Dublin.

NIXON, Sir CHRISTOPHER, Bart., M.D. R.U.I., F.R.C.P. Irel., has been appointed Professor of Medicine in the University College, Dublin.

POTTER, J., L.D.S. R.C.S. Irel., has been appointed Lecturer in Dental Mechanics in the University College, Dublin.

ROSCOE, HENRY, M.R.C.S., L.R.C.P. Lond., D.P.H., has been appointed House Governor of the North Staffordshire Infirmary and Eye Hospital.

SERGEANT, F. G., M.B., B.S. Lond., has been appointed Obstetric Assistant to University College Hospital.

SHERIDAN, E., L.D.S. R.C.S. Irel., has been appointed Lecturer in Dental Surgery in the University College, Dublin.

SMITH, ALFRED, M.B., M.Ch. R.U.I., F.R.C.S. Irel., has been appointed Professor of Midwifery and Gynæcology in the University College, Dublin.

SMITH, R. R., M.R.C.S., L.R.C.P. Irel., has been appointed Resident Medical Officer to the British Lying-in Hospital.

SYKES, HAROLD W., M.B., B.S., has been appointed Senior House Surgeon to the Ingham Infirmary, South Shields.

WALKER, A. S., M.B., Ch.B. Edin., has been appointed Medical Officer to the Leith School Board.

WERNER, L., M.B., B.Ch. Dub., F.R.C.S. Irel., has been appointed Lecturer in Ophthalmology in the University College, Dublin.

WIGHT, A. R., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Leslie District of the county of Fife.

THE following have been recommended for Professorships in the University College, Dublin:—

MCARDLE, J. S., F.R.C.S. Irel. (Surgery).

MCLOUGHLIN, E. P., M.B., B.Ch. Dub. (Anatomy).

SIGERSON, G., M.D. R.U.I. (Zoology).

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BETHNAL GREEN INFIRMARY AND WORKHOUSE.—Assistant Medical Officer. Salary £100 per annum, with residence and board.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES, John Bright-street, Birmingham.—Clinical Assistant. Salary at rate of 52 guineas per annum.

BIRMINGHAM CITY FEVER HOSPITAL, Little Bromwich.—Assistant Resident Medical Officer. Salary £120 per annum, with board, lodging, washing, &c.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

BURNLEY UNION WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, rations, washing, and attendance.

CANCER HOSPITAL, Fulham-road, London, S.W.—Assistant Anæsthetist. Salary 25 guineas per annum.

CHARTHAM, KENT COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £145 per annum, with board, quarters, attendance, and washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—House Surgeon, unmarried. Salary £80 per annum.

CHICHESTER, WEST SUSSEX AND EAST HANTS GENERAL INFIRMARY AND DISPENSARY.—House Surgeon, unmarried. Salary £90 per annum, with board, residence, and washing.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

DUMFRIESSHIRE SECONDARY EDUCATION COMMITTEE.—Two Medical Assistants. Salaries £250 per annum.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon. Salary at rate of £75 per annum, with board and residence.

GORDON HOSPITAL FOR FISTULA, &c., Vauxhall Bridge-road S.W.—House Surgeon, for six months. Salary £25.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Physician. Also Surgeon to the Ear and Throat Department.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale.—Resident Medical Officer.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Fourth Anæsthetist. Salary £15 15s.

LEEDS GENERAL INFIRMARY.—Ophthalmic House Surgeon. Salary £50 per annum. Also Two House Physicians for six months.

LEICESTER, LEICESTERSHIRE AND RUTLAND ASYLUM.—Senior Assistant Medical Officer, unmarried. Salary £170 per annum, with board, residence, and laundry.

LINCOLN COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Salary at rate of £75 per annum, with board, residence, and washing.

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea-gardens, S.W.—Two Assistant Bacteriologists. Salaries £250 and £200 per annum respectively. Also Jenner Memorial Studentship and Grocers' Company Research Studentship. Annual value £150.

LIVERPOOL, STANLEY HOSPITAL.—Junior House Surgeon. Salary £60 per annum.

LONDON HOSPITAL, Whitechapel, E.—Assistant Anæsthetist.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Medical Registrar.

METROPOLITAN HOSPITAL, Kingsland road, N.E.—Dental Surgeon.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Senior and Junior Resident Medical Officers. Salary £175 and £75 per annum respectively, with board and residence.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160, with apartments, attendance, light, and fuel.

NOTTINGHAM GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third House Surgeon. Salary at rate of £50 a year, with board and residence. Also Assistant Surgeon.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, E.C.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ST. MARY'S HOSPITAL, Paddington, W.—Assistant Physician to Out-patients.

SALOP INFIRMARY AND COUNTY HOSPITAL.—House Physician. Salary at rate of £70 per annum, with board and apartments.

SALTERLEY GRANGE SANATORIUM FOR CONSUMPTIVES, near Cheltenham.—Medical Superintendent. Salary £250 per annum, with board.

SCOTLAND, HARRIS PARISH.—Medical Officer. Salary £126 per annum, with free house.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £50, with board, lodging, and washing.

STAFFORDSHIRE COUNTY ASYLUM, Cheddleton, Leek.—Senior Assistant Medical Officer. Also Junior Assistant Medical Officer. Salaries £250 and £200 per annum respectively, with board, apartments, and washing.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry

STAMFORD HILL AND STOKE NEWINGTON CHARITABLE DISPENSARY, N.—Assistant Medical Officer. Salary £100 per annum, with board and residence.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Resident Surgical Officer, House Physician, and Junior House Surgeon. Salaries £120, £100, and £50 per annum respectively, with apartments, board, and washing.

SURREY DISPENSARY, Southwark, S.E.—Physician. Salary 50 guineas per annum.

SWINDON, G.W.R. MEDICAL FUND SOCIETY.—Assistant Medical Officer, unmarried. Salary £300, advancing to £400 per annum.

THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board, residence, and laundry.

TUNBRIDGE WELLS GENERAL HOSPITAL.—Junior Resident Medical Officer. Salary £80 per annum, with board, residence, &c.

UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.—Resident Medical Officer, Surgical Registrar, and Obstetric Registrar.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £30, with board, lodging, and laundry.

WEST HERTS HOSPITAL, Hemel Hempstead.—House Surgeon. Salary £100 per annum, with rooms, board, and washing.

WESTMINSTER HOSPITAL, S.W.—Obstetric Physician. Also Assistant Obstetric Physician.

WEST SUFFOLK EDUCATION COMMITTEE.—Medical Inspector of School Children. Salary £250 per annum, with travelling expenses.

THE Secretary of State for the Home Department gives notice that he proposes to appoint an additional Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 6, to be attached more particularly to Southport and Ormskirk County Court, and is prepared to receive applications for the appointment.

Births, Marriages, and Deaths.

BIRTHS.

CONSTANT.—On Oct. 25th, at Gravesend, the wife of Frederick Constant, L.D.S. Eng., of a son.

COOPER.—On Oct. 19th, at Hospital House, Pembroke Dock, to Surgeon Henry Cooper, Royal Navy, and Mrs. Cooper, a daughter.

LUMSDEN.—On Oct. 24th, at Fitzwilliam-place, the wife of J. Lumsden, M.D., of twin daughters.

PEARSON.—On Oct. 21st, at the Manor House, Leighton Buzzard, the wife of Reginald Spencer Pearson, M.R.C.S. Eng., &c., of a son.

PENNEFATHER.—On Oct. 23rd, at Deanhurst, Harrow, the wife of C. Maxwell Pennefather, M.B., B.S., of a son.

MARRIAGES.

BYLES—HAMAIN.—On Oct. 25th, at Arras, Pas de Calais, France, James Beauzeville Byles, M.B., to Marie Alice Cecile, daughter of M. and Madam Hamain, France.

ELLIS—SANDERS.—On Oct. 19th, at St. Leonard's Church, Colchester, by the Rev. Canon Sanders, uncle of the bride, assisted by the Rev. J. M. Evans, Rector of Lexden, Frederick William Ellis, M.D., F.R.C.S. Eng., youngest son of the late Christopher Ellis of Penpol, Hayle, Cornwall, to Constance Maude Frances, eldest daughter of Edwin J. Sanders, of Lexden Park, Colchester.

JACKSON—ORMEROD.—On Oct. 20th, at St. Matthew's Church, Rastrick, Major R. W. H. Jackson, R.A.M.C., to Mary Beatrice, youngest daughter of the late C. J. Ormerod, Esq.

MASON—JACKSON.—On Oct. 27th, at St. Peter's, Little Thurlow, by the father of the bride, John Black Mason, M.B., Ch.B. Edin., of Ealing, to Edith Lilian, second daughter of the Rev. Robert Jackson, M.A., Rector of the parish.

MILBANK-SMITH—FORESHEW.—On Oct. 22nd, at St. Margaret's, Streatham Hill, Harry James Milbank Milbank-Smith, M.R.C.S., L.R.C.P., to Beatrice Ada, second daughter of Frederick Foreshew, Clapham Park, S.W.

WATSON—MACFARLANE.—On Oct. 20th, at St. Mary's, Carden-place, Aberdeen, John Nuthall Watson, M.R.C.S., L.R.C.P. Lond., to Eleanor Gordon, third daughter of the late Alexander Macfarlane, H.M. Customs, and of Mrs. Macfarlane.

DEATHS.

HOLMAN.—On Oct. 23rd, at Gate House, East Hoathly, Sussex, Thomas Holman, M.R.C.S., L.S.A., in his 72nd year.

MYERS.—On Oct. 21st, at Kent Cottage, Cleveland-road, Ealing, Henry Reynolds Myers, V.D., late Surgeon-Colonel 19th, late 37th, Middlesex (Bloomsbury) Rifle Volunteers, in his 73rd year. Friends please accept this, the only intimation. Colonial and Egyptian papers, please copy.

REID.—On Oct. 25th, Charles Reid, M.B., C.M., aged 45 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HYPODERMIC PURGATIVES.

IN the August number of the *Journal of Pharmacology and Experimental Therapeutics* Professor John J. Abel and Dr. L. G. Rowntree of the Johns Hopkins University contributed the first section of a paper on the pharmacological action of phenolphthalein and of some of its derivatives, with special reference to their behaviour as purgatives. An attempt was made to study the influence of substitution in various parts of the molecule upon the pharmacological and physiological properties of the phthaleins, more especially upon their excretion, reabsorption, and purgative action. Aside from these problems of theoretical and practical interest it was hoped that the investigation might lead to the attainment of a therapeutic end—namely, the discovery of a serviceable hypodermic purgative. The various experiments, which were made on dogs and rabbits, have led to results of considerable scientific and practical interest. They show that phenolphthalein and phenoltetrachlorphthalein do not differ markedly in their pharmacological behaviour. They are non-irritant when applied to mucous membranes or to open wounds, or when injected subcutaneously in oily solution. Their sodium and potassium salts, however, are highly irritating when administered subcutaneously in aqueous solution. The toxicity of these phthaleins is very low; large quantities may be injected repeatedly into a vein of the dog without causing any apparent pathological lesions; when given intravenously they cause a small and rather prolonged rise of arterial pressure. Both phenolphthalein and its tetrachlor derivative are laxative or purgative when given by the mouth or when injected under the skin or into a vein. When a solution of 0·4 gramme of the tetrachlor derivative in neutral olive oil is injected under the skin of dogs or of human beings a laxative action is induced which continues from four to six days. Phenolphthalein administered in the same dose and in the same way does not act for so long a time for the reason that it is more quickly excreted. This prolonged action, together with the low toxicity of these compounds, leads to the belief that a serviceable hypodermic purgative will be found among the phthaleins or their derivatives. The tetrachlor compound is efficient as a laxative, but its insolubility in water and its low solubility in oil stand in the way of its general adoption, although they do not detract from its efficiency when a subcutaneous laxative is required. It may be mentioned that in the various experiments on dogs it was held that the drug under trial had acted as a laxative when the fæces had changed from the clay-coloured, dry, and friable condition of the fore period to a brown or black, moist, homogeneous, sticky or pasty consistence. The experiments further show that the subcutaneous injection of an aqueous solution of the sodium salt of phenolphthalein, as suggested by Fleig, is impracticable owing to its irritating action, which is probably due to the liberation of sodium hydroxide in the tissues by hydrolytic dissociation. The success so far obtained in effecting purgation by the subcutaneous injection of an oily solution of the tetrachlor derivative of phenolphthalein without the production of local pain marks a distinct advance in therapeutics. Eserine and apocodeine are being used for this purpose to a limited extent in medical practice, but untoward results are frequently obtained with the former, while the latter, according to Heinze, cannot be depended upon in more than 47 per cent. of the cases. In hospitals for epileptics and the insane occasions frequently arise when a hypodermic purgative is needed, owing to the refusal of patients to take drugs by the mouth or in the form of an enema. This form of medication is also indicated in conditions of the digestive tract when administration by the mouth is impracticable, in comatose states, in cases where tolerance has been established to purgatives given by the mouth, and especially in the practice of abdominal surgery. Turning to the mode of excretion of the phthaleins, the investigation shows that the tetrachlor derivative, when given subcutaneously, escapes from the body in the bile only. When phenolphthalein is given in the same way a part of it always escapes in the urine. When the tetrachlor derivative is administered by the mouth none of it appears in the bile or urine, but phenolphthalein, administered in a similar manner, may appear in both of these secretions to a small extent. As regards absorption by the large intestine, proof was obtained in several ways that after the subcutaneous administration of phenolphthalein and its tetrachlor derivative the mucosa of the large intestine absorbs these drugs from their solution in bile. It was also found that these compounds are not excreted by the intestines, except, perhaps, in minimal amounts.

AN INVALID BABIES' HOME.

A MEDICAL correspondent writes:—

"I believe I am correct when I say that there is not a convalescent home for babies under two years of age existing in England. That being so, I wish, through the medium of THE LANCET, to make more generally known a small home for babies which has recently been started by a community of Dominican nursing sisters at Bury St. Edmunds. I can testify to the excellence of their work,

for whilst they were in London I visited the home. At that time the sisters had charge of four small children ranging from 18 months to two years old—one child had been taken from the Queen's Hospital, Hackney-road, a deplorable-looking little object with infantile hemiplegia, and two other little miseries from the slums of Hoxton, one of whom had been living in a cellar. They were all promptly put in the garden and kept there all day and made rapid progress and were to me a striking example of what fresh air, sunlight, plain and simple food will do for such cases. The children became fat and rosy, pictures of health. I am glad to have this opportunity of testifying to the careful and constant personal devotion to the little ones on the part of the sisters, who are hoping to extend their work, at present very limited as to numbers from want of funds. They will be glad to receive infants from one to three years of age suffering from rickets, paralysis (infantile and other forms), "wasters," and convalescents from acute diseases. A minimum charge of 5s. a week is made. I hope my *confrères* will make this work known, for I feel sure that such a home is very necessary and would probably be well supported were it known to exist. The address is, The Superioress, Home for Invalid Babies, 76, Guildhall-street, Bury St. Edmunds."

SMALL PROPERTY AND PUBLIC HEALTH.

Dr. G. W. Eustace of Arundel gave an address on "Why it is Difficult to Guard the Public Health," at a meeting of the Public Health and Local Government Officers' Association for Sussex, at Chichester, on Oct. 16th. In the course of his remarks he said there was an immense number of houses of the working classes which were unfit for human habitation, and the great difficulty was to bring them to the knowledge of the governing council. There was, he said, no machinery by which this could be done properly; it was done by disease after a man or woman or the children had gone to their graves. The medical officer's hands were tied because the working classes would not make complaint for fear of being turned out. Dr. Eustace is at the present time Mayor of Arundel, and in that borough, he said, a resolution had been passed that it should be the duty of the sanitary inspector to examine every house in the borough once in two years. The result, he added, had far exceeded what he expected, and in a great many cases some defect dangerous to human life was found. The difficulty which resulted from the condemnation of small property was that the tenants had no other place to go to, but Dr. Eustace thought that that was a difficulty which time must find some way to meet. In the subsequent discussion it was contended that the law did not go far enough and that sanitary authorities should have power to obtain an order from the justices for the closing of houses without serving a notice on the owner to abate the nuisance.

THE RELATIVE ACTIVITY OF NATURAL AND SYNTHETIC ADRENALIN (SUPRARENIN).

THE discovery of the vaso-constrictor action of the extract of the suprarenal glands by Oliver, Schäfer, and others stimulated research into the chemistry of this valuable therapeutic agent, with the result that an active principle, more or less pure, was soon isolated by Abel, Aldrich, Takamine, and others. In proportion as this interesting substance was studied by physiologists and clinicians its field of usefulness was rapidly extended, until it has become recognised as one of the most useful drugs in the materia medica. Within the past few years synthetic methods have been discovered for producing bodies having the properties of adrenalin, including synthetic suprarenin, arterenol, homorenon, and other catechol derivatives. Of these the first named, a methylamino alcohol, was claimed by Biberfeld to be physiologically identical with the natural substance. Dixon and Cushny, however, found that these substances did not possess equal activity, and evidence was soon obtained that the synthetic substance was optically inactive, being a mixture of the dextro- and lævo-rotatory bases, of which the latter alone was markedly active, thus supporting Cushny's conclusion that the natural base, which is lævo-rotatory, is twice as active as the synthetic base. Later, Cushny examined specimens of the dextro- and lævo-varieties of the synthetic base and found that their physiological activity was in the ratio of 12 : 1, while the lævo-rotatory synthetic base was about equal in potency to the active principle obtained from the glands. The manufacturers of the synthetic product, however, do not appear to have allowed Cushny's work to pass unchallenged, with the result that during the past few months the question has been in an unsettled condition. In view of the great importance of the matter it is satisfactory to note that an investigation has been conducted by Dr. W. H. Schultz, in the pharmacological laboratory of the Public Health and Marine Hospital Service of the United States, and the results are published in the form of a bulletin (No. 55) of 77 pages. One of the first difficulties encountered was the variation in the activity of the natural substance (adrenalin) found upon the market. A quantity was purchased direct from the maker, and after re-purification it was found to contain only 31 per cent. of the pure base, whereas the maker had claimed that it contained 77 per cent. In comparing the activity of the various substances Dr. Schultz determined the rise of blood pressure in dogs under morphine-ether anæsthesia, the vagi being cut, and sufficient curare being given to prevent tremor of the muscles. The determination of the mydriatic action of adrenalin and its substitutes upon the frog's eye, when exposed to bright sunlight, afforded trustworthy results, but the reaction is less delicate and more tedious than the blood-pressure method. He found that the optically inactive synthetic suprarenin possesses only two-thirds of the vaso-constrictor and mydriatic properties of the natural substance. It is interesting to note that isolated experiments might be taken from those recorded by Dr. Schultz to show that both Biberfeld and Cushny were correct. A comparison of successive sets of readings, however, shows that Cushny's results were more nearly correct than those of Biberfeld. Of the other catechol derivatives arterenol was found to be equal in activity to the natural substance, while homorenon possesses but one-eightieth the activity of either. Experiments made on mice to determine the relative toxicity of these substances showed that the natural product is one and a half to twice as toxic as the optically inactive synthetic substance, five times as toxic as arterenol, and from 80 to 88 times as toxic as homorenon. In conclusion, Dr. Schultz suggests that the relative physiological activity of these catechol derivatives seems to depend upon a substance partaking of the properties of a secondary alcohol or ketone, upon the nature and number of groups displacing the hydrogen of the amino group, and upon the arrangement of the asymmetric carbon atom in space. With the theory that these are the determining factors in modifying the vaso-constrictor action of such compounds, it is hoped that as a working basis it will aid in a more extended study of other compounds possessing similar physiological activity.

OUR DEADLY ATMOSPHERE!

THE following words form the last paragraph of an article in the *Daily Mail*, headed "Scientists in a Boiler," describing certain physiological experiments with high atmospheric pressures at the London Hospital Medical College:—

> "An important point which has been elucidated by these experiments is that the poisonous factor in the atmosphere, nitrogen, is absorbed five times faster by the fat than by any other tissue in the body, and that, therefore, fat men are peculiarly unsuited to act as divers, workers in compressed-air caissons, etc., for their liability to absorb nitrogen with undue rapidity makes them fall ready victims to heart and circulatory troubles when working under such conditions."

Doubtless we shall soon be supplied with a nitrogen-free atmosphere now that the attention of the authorities has been called to the poisonous properties of that inert gas in which mankind has been immersed for so many centuries.

A HYGIENIC TABLE-FORK.

To the Editor of THE LANCET.

SIR,—I have read with much interest the notice in your issue of Sept. 18th of an invention with this title. Had this invention been given to the world some 20 years ago the career of a poor lad who has since been often in my mind would not have been blasted.

In the spring of 1889 I started housekeeping in a small settlement on the Portuguese coast of West Africa, and the servant problem was one of many with which I was faced. For the household work I was obliged to hire some juvenile slaves from their masters, and their youth and inexperience caused me many a pang. One of these, to whom fell the duty of cleaning the knives and forks, was a dusky youth who, from his striking profile, the palmated form of his feet, and the unpronounceability of his own name, was rechristened by me "Pato Ganso"—or "The Goose." He was a well-meaning boy, but I could not disguise from myself the fact that the forks too often showed traces of what appeared to be the previous meal lodged in the angles between the prongs, and I felt it my duty to seek an interview with him while he was at his work. I found him busy at his table. On one side of him was a pile of "dirty" forks, on the other was a smaller heap of "clean" ones. Pressed firmly between his lips was a fork thrust well home into his enormous mouth. Eyeing me with the steadfast and contented gaze of a menial who has by chance been caught doing his work conscientiously and well, he slowly but firmly withdrew the fork and placed it on the "clean" pile. Still regarding me with the respectful air of a good and faithful servant he took up a "dirty" fork and, to the apparent imminent danger of his uvula, proceeded with the cleansing process. Before this was completed, however, he was, to his bewilderment, sent back to his master, who relegated him to agricultural labour, to the hardships of which he, doubtless, succumbed in due course. Had a hygienic fork been in existence in those days The Goose might by now have attained the dignity of a butler's position, and I should have been spared many a retrospective shudder.

I am, Sir, yours faithfully,

Bombay, Oct. 5th, 1909 NIGEL KEN.

CONVICTION OF A BIRD-BLINDER.

THE practice of blinding birds with the superstitious motive of improving their powers of song is unhappily common enough in Southern Europe, but it is very rare to hear of a case being proved in this country, although it is generally known that English bird-fanciers exist who are brutal enough to do it. On Monday last Frederick Collins was sentenced to three months' hard labour at Lambeth police court for destroying the sight of two chaffinches. According to the *Times* report, Mr. Alexander Pearce, a veterinary surgeon, said that he had examined the birds, and in one case both eyes were disorganised; in the other only one eye seemed to have been tampered with. He was of opinion that the optic nerve and the

central artery of the retina had been severed by inserting a needle at the back of the eye. An officer of the Royal Society for the Prevention of Cruelty to Animals (which instigated the prosecution) deposed that the defendant had confessed to him that he had blinded the birds, "but it was a dangerous word to use." He also said, "At my game you have to be a teetotaler. You want a very steady hand with the needle." The defendant protested his innocence, but received the sentence stated above. Cruelty of this kind can only be appraised by its motive, and as the motive that makes bird-blinders is simply the desire for gain, there are few punishments that can be considered excessive for them.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—J. Gray Duncanson, H. Charles Cameron): at 4.30 P.M.

Papers:

Dr. David B. Lees: The Physical Signs of Incipient Pulmonary Tuberculosis and its Treatment by Continuous Antiseptic Inhalations, with the Results in 30 Cases.

Dr. H. H. Dale: The Action of Some Diuretics.

PATHOLOGICAL SECTION (Hon. Secretaries—L. S. Dudgeon, C. Bolton): at Royal Medical College, Millbank, at 8.30 P.M.

Laboratory Meeting.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—George C. Cathcart, L. Hemington Pegler): at 5 P.M.

Mr. Seccombe Hett: (1) Chronic Glanders in a Man aged 24 Years; (2) Three Specimens of Neoplasms of the Palatine Tonsils, and One of the Pharyngeal Tonsil, Removed by Operation: Microscopic Sections of the Growth; (3) An Attachment to v. Bruning's Instrument for Facilitating Manipulations under Direct Laryngoscopy.

Dr. Dan McKenzie: Perforation of the Nasal Septum from Salt (NaCl) Dust in a Woman aged 20 Years, and Specimen prepared by Dr. Wyatt Wingrave.

Dr. St Clair Thomson: (1) Tuberculosis of Left Vocal Cord and Inter-arytenoid Space, in a Lady aged 46 Years, Completely Healed by 2 Months' Silence and Sanatorium Treatment; (2) Tuberculosis of the Larynx in a Medical Man, aged 41 Years, Developing after Sanatorium Treatment, and Cured by Galvano-cautery; (3) Tuberculosis of the Epiglottis, Left Aryepiglottic Fold and Left Inter-arytenoid Space in a Gentleman, aged 47 Years, Completely Healed by Galvano-cautery and Sanatorium Treatment; (4) Papilloma of the Larynx in a Boy, aged 6½ Years; 4 Years' Duration, Cured by Tracheotomy and repeated Operations by Direct Laryngoscopy; (5) Enchondroma of the Larynx in a Woman, aged 58 Years, Removed by Laryngo-fissure.

Dr. Jobson Horne: Laryngeal Neoplasm in a Woman, aged 64 Years—brought before the Section on Nov. 6th, 1908, when a Microscopic Section was also exhibited.

Mr. Stuart-Low: A Case of Extra-laryngeal Inoperable Carcinoma, shown at Meeting on May 7th, and shown again to Illustrate Beneficial Effects of Operation on Thyroid Gland.

Dr. Dundas Grant: (1) Neoplasm or Infiltration (Tuberculous) of Left Ventricular Band Concealing Left Vocal Cord; (2) Epithelioma on Posterior Surface of the Cricoid Cartilage, Simulating Tuberculosis, in a Woman, aged 29 Years, Operation for Complete Laryngectomy begun but abandoned on account of Extensive Involvement of Œsophagus; (3) Epithelioma of the Right Vocal Cord in a Man, aged 60 Years, Removal by Thyrotomy; (4) Epithelioma of Left Vocal Cord in a Woman, aged 58 Years, Removal by Thyrotomy.

Dr. Dundas Grant and Dr. Dan McKenzie: Epithelioma of Left Vocal Cord in a Woman, aged 58 Years, Removal by Thyrotomy.

Dr. Irwin Moore: Paralysis of Left Recurrent Laryngeal Nerve existing for 21 Years in a Male, aged 57 Years.

Dr. Clayton Fox: Paralysis of the Vocal Cord in a Case of "Myotonia Atrophica."

Mr. E. B. Waggett: Case Illustrating the Evil Effects of Prolonged Use of Cocaine in the Nose.

Dr. Scanes Spicer: Model by which the Variation in Effect of Costal (back) and Abdominal (belly) Breathing on the Stresses, Strains, and Frictions in the Throat and Larynx, more especially of Cricoid Cartilage on the Spinal Column, and also the Transverse Axis of Respiratory Rotation of the Cricoid on the Thyroid Cartilages, can be Illustrated.

SECTION OF ANÆSTHETICS (Hon. Secretaries—Llewelyn Powell, R. W. Collum): at 8.30 P.M.

Paper:

Dr. Vivian Orr: Heart Massage in Chloroform Syncope.

Short Communication:

Dr. R. H. Hodgson: An Apparatus for the Administration of Ether by the Open Method.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Meeting.

RÖNTGEN SOCIETY, 20, Hanover-square, W.

THURSDAY.—8.15 P.M., Ordinary General Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY.—5 P.M., Dr. J. A. Lindsay: Darwinism and Medicine. (Bradshaw Lecture.)

THURSDAY.—5 P.M., Sir T. Clifford Allbutt, K.C.B.: Greek Medicine in Rome. (Fitz-Patrick Lecture.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Prof. S. G. Shattock: Sarcoma. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M., Lecture:—Dr. G. E. Herman: Puerperal Eclampsia.

TUESDAY.—4 P.M., Dr. J. Taylor: Clinique (Medical). 5.15 P.M., Lecture:—Dr. Purves Stewart: Facial Hemispasm.

WEDNESDAY.—4 P.M., Mr. A. P. Gould: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. E. Giles: The Menopause, Natural and Artificial.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. L. Guthrie: Some Nervous Affections in Children.

FRIDAY.—4 P.M., Dr. J. Horne: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. R. Lloyd: Anæsthetics.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Moullin: Gynæcological Cases.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Low: Examination of Blood in Tropical Diseases.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture: Mr. Edwards: Clinical.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Mr. B. Harman: Diseases of the Eyes. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 1.40 P.M., Special Lecture:—Mr. R. Lake: Post Nasal Catarrh.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture:—Dr. F. Taylor: Aortic Disease.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations (Mr. H. W. Carson). Clinics:—Gynæcological (Dr. A. E. Giles); Surgical (Mr. W. Edmunds).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical Out-patient (Mr. H. W. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations (Mr. W. Edmunds). Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks); Skin (Dr. G. N. Meachen). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Accessory Sinuses.

FRIDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Accessory Sinuses.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

MONDAY.—4 P.M., Lecture: Dr. G. Holmes: Clinical Anatomy of the Nervous System—The Cerebellum and the Mid-brain.
TUESDAY.—3.30 P.M., Clinical Lecture. Dr. Ormerod: Tabes.
FRIDAY.—3.30 P.M., Clinical Lecture:—Mr. Sargent: Surgery of the Nervous System.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.
WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration:—Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Syphilis: History and Primary Invasion (Constitutional and Local). Eruptions, Erythematous: I., Macular; and II., Maculo-Papular.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (3rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (4th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (6th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 28th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 22	30·22	S.W.	...	83	60	48	50	52	Overcast
,, 23	29·93	S.W.	...	91	63	52	58	59	Cloudy
,, 24	29·66	W.	0·09	95	51	51	50	54	Cloudy
,, 25	29·88	N.W.	0·02	90	52	41	41	43	Fine
,, 26	29·59	N.E.	0·03	51	49	40	43	44	Raining
,, 27	29·46	N.E.	0·61	47	47	44	45	46	Raining
,, 28	29·53	N.E.	0·47	53	49	45	44	46	Overcast

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